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ORGANIZED MEDICINE; RESPONSIBILITIES OF OUR ASSOCIATION

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(Presidential address to the 46th Annual Session of the Arizona State Medical Association, Yuma, Arizona, April 1-3, 1937).

I appreciate the confidence you placed in me by electing me your president. I fully realize the duties and responsibilities which this honor carries and will attempt to discharge them to the best of my ability. I sincerely trust that I may have your whole-hearted cooperation and support.

Organized medicine is confronted today with a **definite challenge** to the very principles upon which it is founded. I discuss methods of defense and attack that may be applied in our association. In a recent address of Dr. Heyd, President of the American Medical Association, he defined organized medicine as follows: "It simply means all medical discovery is founded upon two facts, the discovery itself and its diffusion to the population. The county and the State Organization exist in order that this diffusion of knowledge may take place."

Organized medicine need make **no apologies for its existence;** but we have not fully met our responsibilities in the dissemination of medical knowledge. Its altruistic purposes of serving for the protection of public health and promoting the science and art of medicine have carried it through all ages. Throughout all periods of governmental failure and social disorganization, medicine not only continued to function but progressed in knowledge. It has elevated the standard of medical education and practice to a higher level than that of any other profession. Medicine survived all ages of social chaos because it had its contract with the individual and not with the varying politic-social structures of government.

This seems to be an **age** however **of organization,** and most everything accomplished now is through organization—not by individual action. Hence we need to become militant and take the lead in all public health matters instead of lagging behind until some other organization initiates them. Who else is qualified and knows what should be done?

Although our association is small and some of our component societies small and scattered, its **strength** can be great **if we** only **stick together** on important issues and adopt and promote definite projects in which the individual member can take part and act as a united body.

It has been stated that medical organizations must be non-political and non-partisan. In a sense this is true. However, when it comes to questions involving public health and scientific medicine, medical organizations and the medical profession cannot and should not be non-political and non-partisan. We must **take an active interest** in promoting the candidacies of men who believe in **efficient public health** administration and **scientific medicine.** If we take a passive attitude, or vote unwisely, because we make no effort to acquaint ourselves with the facts, we will find our troubles and difficulties multiplied many times.

If one looks through the membership roll of the state association he finds a considerable number of **physicians** of ability and influence who are **not taking** as **active** a **part** as they should in activities of organized medicine. To remedy this situation should be one of our chief objectives. Most of those taking only a half-hearted interest in organized medicine belong to 1 of 2 groups. One group comprises those who are content to let accommodating men with unusual energy and initiative, shoulder the responsibilities of county and state organization activities, as long as they can par-

ticipate in the benefits accruing from the hard and earnest work of the volunteers. The second group is composed of physicians who are devoting so much time and effort to the affairs of special medical or scientific societies or social affairs, that they have little opportunity or inclination to take part in the activities of their county medical society and the state association. It is time that men who are badly needed in organized functions of the medical profession in Arizona be made to realize that medical organization will not be able to present a solid front in attacking serious questions constantly arising, unless this lazy attitude on the part of some and the scattering devotion on the part of others are corrected.

We must always remember that the **success, reputation and ideals** of the Arizona State Medical Association are **dependent** upon the efforts and aspirations of one and **all of us.** The officers are but elected servants of the association. The success of our organization must depend upon the combined efforts of all as individuals and not upon the idealism of the few. What methods are we to use to correct this apathy of our members so that your association can speak and act with authority and the full cooperation of its members. We need to strengthen, and if necessary reorganize, our association from top to bottom. We must build up our county societies, increase attendance in order that all may express their views and develop some means of bringing a closer working relation between the county societies. Our county societies are inclined to work or exist too much as independent units without thought or interest in what the other counties are doing.

No county society should deal independently with any state or federal official on any subject, except what is purely local and that does not have any bearing on other county or state action. Individuals likewise should act entirely through the organization for the best interest of the public health and the profession. Individual independent action, however well intentioned and well thought out, seldom accomplishes its purpose.

If those members who are inclined to criticize the association or its officials, will only do their duty and **present** their **suggestions or opinions** through the proper channels, they will be appreciated and may be helpful. Although we may not always agree on everything, we at least can cooperate and work things out together to the benefit of all. The advancement of public health in Arizona will be dependent upon the extent to which the individuals of the medical profession learn that everything pertaining to public health and the policies of the association, must go through the proper channel of the association.

Your **state organization** can be only as **strong** as the **individual societies** wish to make it. Do not overlook the fact that independent precipitate action by individual or county units may bring temporary benefit, but it weakens the authority of your state organization and can easily provide further incentive and argument for those who would destroy us. Our strength in dealing with all public health matters rests in our ability to work together, pooling our united opinions[1] so that when our official organization speaks, it will be with the endorsement of all the profession.

The 2 **fundamental purposes** of the Arizona State Medical Association are the promotion of the science and art of medicine and the protection of public health. Unless we make a definite and sincere effort to carry out these purposes, we have left only a selfish motive for existing as an organization.

No medical society can remain alive and alert unless it offers its members **good scientific programs.** This no doubt is a chief reason why some of our small and distant societies are not active. If all the societies would publish their programs as far ahead as possible in the journal or send out general invitations and also pass on their good programs, it would be a great help in stimulating activity in the smaller societies. Several well prepared district meetings in the different sections of the state should also be of great value. Other states have brought in distinguished instructors to conduct short post-graduate courses. This plan also deserves our serious consideration. There is a definite need for a speakers' bureau, to be operated by the state association, to aid county societies in obtaining qualified speakers and to serve as a nucleus for more extensive educational activities in the future.

Graduate-study is a definite responsibility of medical organizations. Members should be

encouraged to carry on scientific investigations and be given an opportunity to present their work before county societies. A system of rotating medical essayists among other county societies, would offer a means of encouraging better work and larger audiences.

Public educational activities is another and probably the most important responsibility of organized medicine. It has been aptly stated, that the question of state or **socialized medicine** will not be decided by the physicians of the country. It will be decided by the public; and the ability of medicine to sway this decision is in direct ratio to the number of persons whose views it can influence. In other words the future of medical services, from whatever angle viewed, be they public health or individualized medical care, will be advanced or retarded in direct proportion to the interest taken in the social aspects of medical services by the organized profession. Do you know that engaged in some form of health activity, are the following: six national governmental agencies, 6 national foundations, 25 non-official national organizations and groups in state, city and county, including health departments, insurance companies, industrial organizations and school health services?

Organized medicine must make its presence felt in all organizations, having to do with health matters and it must automatically be looked upon as the proper source for advice and leadership. It must teach the public that the best security for the people's health is an organized profession actuated by sound ethics. Unless organized medicine remains alert and militant, the medical profession will be battered from pillar to post and the principles, for which it stands, destroyed. It appears obvious, that the future integrity of medicine as an independent, unfettered, profession, holding fast to proven ethical standards, will depend upon the degree to which we, as an organized profession can fill our proper position in the social life of the community.

Our state association has taken **two important steps** in the right direction to centralize our actions, namely, the employment of an assistant lay secretary and the appointment of the Social Security Committee as the official representative of the association in all social security activities. If however, the medical profession of Arizona expects to receive consideration and have influence in the protection of public health and the character of future medical service, it is highly important that our state association take immediate steps to establish a definite program of Public Relations Activities.

The carrying out of this program can best be done by the establishing of a strong energetic **state public relations committee,** assisted by public relations committees in each county. Some of the specific duties of this committee, under public education, should be to establish intimate contact with and free access to newspapers, radio and lay-organizations, such as service clubs, church groups, etc. It should cooperate with lay welfare groups to the end that advice and guidance on all matters of health and medical service will always be sought for and originate in the organized profession. It should maintain a close co-operative union with health authorities—both state and local. Two other valuable means at our disposal in carrying out our public education and relations activities include the promotion of Hygeia, the health magazine and the utilization of the woman's auxiliary.

As most of you know, I have long been a strong advocate of Hygeia. It is the official lay-health magazine of our association and is probably the most important channel we have of disseminating authentic health information. In doing this it creates respect and a friendly attitude towards the medical profession. Every member in our association should be a subscriber to Hygeia and help promote its circulation to the laity.

The woman's auxiliary as the name implies was formed to help organized medicine carry out its non-scientific program. It has a definite field of usefullness to organized medicine, which does not seem to be fully realized. No program of public relations activities is complete that does not fully utilize, encourage and work with the woman's auxiliary to the fullest extent.

All **legislative activities** should be undertaken only after the most careful study by the public relations committee. It in turn should maintain the closest co-operation with the state committee on public health legislation, which is our public welfare committee.

A censorship should be maintained. The officers and members of state and county medical societies should readily submit all proposed public utterances to the committee on public relations, to insure against errors in judgment or mistaken interpretations by newspapers, radio audiences and the public. This activity should also cover all society publications. The public has access to these and look upon such publications as the voice of the profession. Just as a newspaper editorial reflects the policy of its publishers, just so should the editorials of a medical society reflect only the official policy of the organization and not the personal views of an editor or officers.

The growth of our association along with the increased responsibilities, created by the new social and economic conditions, demands that our **constitution and by-laws be brought up to date.** Numerous changes are necessary to strengthen our organization, in order to carry out a well-defined program. It is advisable that a careful study be made of our needs and a new constitution and by-laws be submitted at our next annual meeting.

In order to properly carry out our responsibilities and an active program for the ensuing year, it is highly important that the **appointment** of a **committee on public relations** be authorized at this session. This committee in co-operation with the public welfare committee, should be instructed to make a careful study of our public health legislation needs and submit a definite program at the next annual session. The frequent changes in the various governmental activities in medical service, demands that we have a central body authorized to represent the association in all dealings with them. I suggest that the public relations committee be given this authority.

In conclusion, what are some of the **immediate responsibilities** presented to our association, to justify its existence? Briefly they may be grouped under a 2 point program, namely: (1) internal or intra-organizational and (2) external or extra-organizational. Under the internal program, we must strengthen our organization by increasing attendance and interest.

To do this we must develop and maintain a **strong scientific educational program.** A committee on scientific education and programs should be appointed, composed of 3 members, in addition to the president-elect, serving 3 years—1 member retiring each year. A definite state-wide program in conjunction with the county societies could be carried out and the entire responsibility of the annual state program would not be placed on a new and inexperienced member each year.

Under the external or extra-organizational program, we must develop and maintain a **strong program of public education,** to educate the public on medical and public health subjects and on some of the complicated economic and social problems involved in the distribution of medical service. On such a program alone, depends the consciousness of the general public that we are an organization which has a greater purpose than mere self-preservation. A strong central state public relations committee should be established to carry out this program.

Whatever benefits the medical profession, benefits the public. It is, therefore, my sincere hope that our association by united, harmonious and conscientious effort, will continue to grow in value and importance. This will be possible if you and all other members fulfill the obligation which you owe to the one organization, which has done more than any other to protect your interests and has provided you with innumerable benefits, which you cannot obtain elsewhere at any price.

NEPHROPEXY—NEGLECTED STEP-CHILD OF SURGERY

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Time was when the surgical world recognized abnormally movable kidneys but didn't know what to do about them, other than to try fomentations, incantations and declamations of various sorts. Then came a period when surgeons adopted an effective method: they summarily removed the offending organ—after which it sinned no more. But two material objections to this radical method of treatment were soon recognized: a mortality

of 25 per cent ensued; and if both kidneys were affected, removal was inexpedient. Then in 1881 conservatism was ushered in by Hahn —the first to plan and deliberately suspend a loose kidney. He felt constrained to do that because he believed there was a stone in the other kidney and was therefore afraid to extirpate the movable one. This first nephropexy was a success; the patient lived through it and recovered—thus establishing the efficacy, as well as the conservatism of anchoring. It was received with acclaim by the surgical world, and adopted by operators of Europe and of our country So enthusiastic did they become that they applied it to many cases without the justification of accurate diagnosis. In fact they were so charmed with it that they often added it as an artistic touch to an abdominal operation done for other purposes (Mathé).

The pendulum swung too far; nephropexy was used and abused beyond all reason. Surgeons seemed more desirous of accumulating a long list of operations to their credit and of attaching their names to some new quirk in the procedure than reclaiming their patients to health. The inevitable result for the operation was suspicion, discredit and finally condemnation; so that for the past decade many of the profession have, with much justification it must be admitted, felt themselves betrayed by the incompetence and commercialism that had crept into the loose-kidney problem.

Honesty demands candor and fairness in discussing this subject, while bias and pre-conceived impressions should be side-tracked.

I have no personal acquaintance with the views and inclinations of the general profession of this West Coast on the applicability of surgery to the pathologically movable kidney, but I know how a large proportion of the profession feel about it in the Middle West, the East and the South; and many of you, as well as I, heard the adverse expressions at 3 successive meetings on this side of the "States" incidental to the meeting at Portland of the American Medical Association a few years ago. These expressions emenated from one of the most erudite and respected members of a world-renowned clinic, and on that account carried weight and force that could not be denied by one not actually doing nephropexies and observing his own experience. Therefore I feel warranted in saying that there is a widely-prevalent sentiment through the profession antagonistic to nephropexy, even to the extent of advising against it, not only to brother practitioners, but to tortured patients anxious to obtain operative relief, having suffered 5, 10 or more years.

I have already admitted that there has been, in former years, much justification for this critical attitude on the part of the profession; but with equal conviction I now wish to assert that "times have changed" and that that attitude is no longer tenable. Through the more exacting and conscientious labors of modern operators, chiefly urologists, a new era has been installed and is in vogue by surgeons the world over. Instead of accepting the mere detection by palpation of a movable kidney as justification for anchoring it, the modern requirements in diagnosis must include the following proof.

1. That the suspected kidney is **pathologically** movable; that the pain and other symptoms complained of are caused by the effects (ureteral kinking, obstruction, etc.,) of that undue mobility.

2. That the pain and symptoms can be aroused by obstructing the ureter or overfilling the kidney pelvis of that side; whereas relieving obstruction in the affected ureter relieves the pain immediately.

Physical confirmation of these clinical evidences of obstruction and back-pressure is obtained by making uretero-pyelograms taken with the patient in the supine and, later, in the upright position. In the presence of advanced undue mobility these show the kidney displaced downward from 3 to 5 inches with the patient upright, as compared with the reclining position, and the dilated, kinked or tortuous ureter, leading up to a dilated or hydro-nephrotic kidney pelvis

If further evidence is needed for attesting the findings, it may be had by withdrawing the ureteral catheter and taking additional x-ray negatives at half-hour intervals to determine the emptying-time of the kidney pelvis and comparing it with the emptying-time of a normal and unobstructed pelvis. The therapeutic test of an abdominal supporter may also be of service.

The almost unanimous verdict of present-day urologists is that unless the suspected case responds positively to such well-defined tests **nephropexy is not justified** and the cause of the symptoms must be sought elsewhere.

Incidentally I mention that one must not expect to find evidence of ptosed kidney in his examination of the urine, which may be as clear and limpid as the healthiest, even in the presence of a markedly damaged ptosed kidney.

It may readily be seen that when the symptoms of pathologically movable kidney are confirmed by the clean-cut cystoscopic and x-ray findings outlined above, the diagnosis is practically impregnable and the anchoring is not only justified but **demanded**, no matter what the doubting Thomases may say on the subject.

In view of the enormous number of favorable reports on nephropexy that have been presented in medical literature in the past decade by surgeons of high standing in all parts of the civilized world[1] the question arises as to why so many of the profession are persistently opposed to it. Can the charge of damage or mutilation be laid against it? Hardly. Conservatism—the **saving** of the threatened kidney—is its very reason for being. Many a kidney and many a life would be saved were the stitches of anchoring taken in time.

I have always thought that so-called "beautiful pathological specimens," such as hydronephrotic and pyonephrotic kidneys, should really be interpreted as a reproach to the profession. They should never be permitted to reach that stage of damage or destruction (unless congenital) but should be recognized in their developmental period and prevented from continuing on their downward career. Early nephropexy furnishes a shining example of such prophylaxis, **preventing destruction that is sure to follow unrelieved obstruction to urinary drainage.**

Dangerous? The mortality is so small that it is negligable. Edebohls reported a mortality of 1.65% in 864 cases; while Dr. Billington, Professor of Surgery in the University of Birmingham, England, in 1928, reported 2,000 nephropexies on 1500 patients: Not a death in the whole series!

Disappointment, relapse,, failure? This question must be analyzed under two headings: 1 Failure in diagnosis, and 2 Instability of the operation.

Failure in Diagnosis. I have already mentioned the loose methods of attaining diagnosis formerly in vogue, the flimsy excuses seized on by would-be surgeons ambitious for numerous operations. It is obvious that failures based on such questionable work should be ascribed to the **operators** rather than to the nephropexies improperly applied.

It is further obvious that if the surgeon does a nephropexy on a patient who is suffering from appendicitis or gall-stone colic, the failure is not the fault of the misapplied nephropexy but the fault of the **operator,** mistaken in his diagnosis—mistaken because he has not fulfilled the exacting requirements for diagnosis outlined above. Therein lies the basis for the big and well-founded progress that has latterly been made in this work: **integrity of diagnosis.** The operator should **know** exactly what he will find before he makes his incision.

Instability of anchorage and relapse. This is an imaginary bugbear that probably has little basis in fact. A nephropexy that is well done by any of the approved methods seldom if ever becomes loosened from its attachments[2]. Several surgeons have had the opportunity of examining such kidneys months or years after such operations and have found them so strongly bound in place that detaching would have been really difficult. So-called relapses and failures must be looked for in other directions. For instance, a woman patient of ours who suffered from a wandering right kidney for 5 years went through the gamut of warnings and protests from her doctors and relatives against seeking operative relief and finally took the matter into her own hands and accepted our advice and our nephropexy, recovering in due time and without disturbance. For a year she was happy in her recovery—her renewed weight and good looks, her digestion and physical energies; but at the end of the year she was filled with dread and discouragement as she began to note the reappearance of unduly frequent urination, burning and pain in the bladder, with feverishness, which she recognized as coming from her urinary tract. Her unwillingness to acknowledge to her husband and doctors that she had

evidently made the great mistake from which they had warned her almost kept her from consulting us again. But finally good sense prevailed and she returned for investigation. We found definite cystitis with colon bacillus infection. Ureteral catheterization gave clear, healthy urine from the right (the anchored) kidney, but gave infected urine from the left; and pyelograms, taken in the upright position, showed the right kidney still in its normal location and position, and the previously dilated pelvis shrunk to normal size: not a thing wrong with it. Treatment of the left (infected) kidney secured prompt recovery and smiles of satisfaction for the patient. We don't know what this husband had to say, but another husband declared that his wife's disposition had been improved so much by our anchoring of her loose kidney that he had changed his mind about replacing her with a new one—possibly a blonde, with firm kidneys.

This case illustrates only one way in which supposed relapses may be explained; obviously there may be many others. These women become nervous and neuropathic from their prolonged suffering, and their apprehensions are often as real to them as holy writ. For solving the questions of possible recurrence, etc., I again refer you to the well-defined methods of examination previously described.

As to arguments in general against nephropexy, by "conscientious objectors" and whispering campaigners, it is a significant fact that all of the papers and reports on nephropexy that have been presented of late years have **definitely in favor of it** in appropriate cases; while I have never yet seen a frank, outspoken paper giving material evidence against it. Such adverse comments are usually based on hearsay remarks, or on alleged failures. I ask, what force has such **negative evidence** when compared with the positive evidence based on **recovered cases?** Suppose someone tells you of a hundred failures; what bearing has that on **10 recoveries** that you have had or personally observed? Your natural and legitimate response would be that the operators responsible for those hundred failures should begin over again and learn the exact requirements of diagnosis and operating—and produce successes instead of failures. This again places the fault where it belongs: on the shoulders of the **operator,** not on the operation.

Who, naturally and properly, are the watchdogs of health for the people? The medical profession, of course. And if it becomes apathetic in that capacity disaster is sure to result. Witness the history of a comparatively recent epidemic of smallpox that occurred in Los Angeles. I am told that in the years 1918 to 1921 compulsory vaccination prevailed, and in that period only 513 cases of smallpox were recorded. But in 1921 (were the doctors napping?) the politicians passed a bill abolishing compulsory vaccination. In the ensuing four years, instead of 500 cases of smallpox there were over 5,000, and the loss of 166 lives in 1926 alone. The campaign of control that followed cost a half-million dollars; and 500,000 persons were vaccinated before the epidemic ceased. J. B. Rhodes, statistician, makes the following comment: If the compulsory vaccination law could be again established, smallpox would become almost entirely unknown in this country. This must have been a severe lesson. As the penitent darky said, when they were putting the noose around his neck for the hanging, "Boss, this sure is going to be a good lesson to me."

The deduction I make from the facts is that it is high time that the profession revise its attitude of skepticism and distrust regarding legitimate anchoring of the kidney; that it take back to its bosom this neglected step-child, all washed, cleaned and powdered as it is; nourish it and watch it grow and, like the ugly duckling, become one of the most beautiful and attractive members of the family; in other words, in its setting in surgery, one of the most useful and beneficent operations extant.

Illustrative Cases

A woman, 54, referred April 10, 1928, for 8 years had pain in the right renal region. Right kidney was depressed to a point opposite the pelvic brim with dilated kidney pelvis and ureter. Nephropexy was done May 3, 1928. Pyelogram taken a month later showed the kidney in normal position, calices restored, pelvis reduced to normal size and the ureter straight. Patient was relieved—the first time in 8 years.

A woman, age 38, had symptoms a year and was rapidly growing worse. Marked hydrone-

phrosis existed in the depressed right kidney, explained by marked kinking of the ureter below it. Nephropexy was done June, 1926, with complete relief, maintained to the present time (11 years). After operation straightened the ureter and placed the kidney in proper location and position with its pelvis much restored. Patient is most appreciative.

A woman with only one kidney, the other having been previously removed. There was a dilated, kinked and looped ureter with a pyonephrotic kidney. Nephrostomy-drainage was the only operative expedient left for this case. Early nephropexy doubtless would have saved both kidneys.

A woman for 12 years had repeated agonizing attacks of pain the right renal region, frequently requiring "replacement of the right kidney, for which theservices of an osteopath were many times required." Our first pyelogram, taken with the patient in the supine position gave no indication of a ptosed kidney other than a slightly dilated kidney pelvis. We took another pyelogram with the patient in an upright position. In this negative the right kidney was markedly depressed with its pelvis definitely dilated; the ureter was sharply kinked, explaining the obstruction to its drainage and the reason for the oft-repeated renal colic that "required the services of the osteopath." Following the nephropexy, there never was another attack of renal colic and the patient recovered her good health, weight and mental composure.

(1) Some of whom are the following:
J. J. Bell, J. C. Birdsall, Dougal Bissel, Burford and Glenn, A. Campatelli, P. Cifuentes, Chevassu, Clyde L. Deming, W. L. Downing, C. Emerson, P. Gelfer T. H. Hammond, Frank Hinman, Boyer Heitz, K. Horie, P. Janssen, Baron Johns, A. Jurozz, Frank Kidd, M. Klika A. Ladwig, Bransford Lewis and Grayson Carroll, Oswald Lowsley, E. Marion Charles Mathe', Viraved, Vincent O'Connor, L. Pansin E. Papin, A. H. Peacock, G. Pisano, B. Rado, J. R. Reeves, August Riley, Juan Salleras, A. J. Scholl, A. Rendle Short, J. Bentey Squier, J. R. Stamper, B. A. Thomas Ledon Uribe, Van Gulik, Charles McKenna, Vecki and Johnson, A. von Lichtenberg and Vozenilek .
(2) We habitually use the method described by Kelly and Burnham in their excellent treatise on Kidney Surgery.

Dr. R. J. Stroud, of Tempe, addressed the annual banquet of American and Arizona Public Health Associations in the Westward Ho Hotel on the evening of April 13th on the subject of "The British Panel System." The doctor was in England last summer and made a first hand investigation of the Panel system and presented his own findings. His paper will appear in Southwestern Medicine in the near future.

Dr. R. B. Durfee of Bisbee is president of the Arizona Public Health Association and presided at its joint meeting, April 16th, with the New Mexico Public Health Association.

PROTAMINE-INSULIN

Its Use in Routine Office Treatment of Ambulatory Patients with Diabetes Mellitus

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The present investigation was undertaken to study the clinical value of protamine insulin and its adaptability to the routine office treatment of ambulatory diabetics.

During the 15 years since the discovery of insulin by Banting and Best, there has been no major therapeutic addition for the treatment of diabetes mellitus until the recent discovery of protamine-insulin combination by Hagedron and associates. This discovery made a valuable advancement in the treatment of Diabetes Mellitus.

Due to the rapid absorption of regular insulin and its short period of activity, much difficulty has been encountered in the control of severe diabetics. These patients require frequent administration of insulin to keep the blood sugar within normal limits, and often suffer from frequent hypoglycemic reactions.

Ever since the discovery of soluble insulin, many attempts have been made to administer it alone, and combined with other substances, so that its absorption and activity would be prolonged. Major[1, 2] has summarized some of the various methods and described the absorption through the skin and mucous membranes by dissolving insulin in diethylene glycol monoethyl ether and pinacol. Insulin combined or mixed with gum arabic, various proteins, oil of lecithin, pituitrin, adrenalin, ferric chloride, and tannic acid[3, 4, 5] have been tried by various investigators without complete satisfaction.

In their search for slow acting insulin, Hagedron and associates[6] found that satisfactory results were obtained in the management of over 100 diabetics, when they combined soluble insulin hydrochloride (old insulin) with the mono-protamine derived from the sperm of a species of trout. In the year since their orig-

inal report in the American literature, protamine insulin has been furnished by American and Canadian manufacturers to a large number of clinicians and several thousand patients have been treated. Many investigators have already published their results, which support the original contentions of Hagedron[6] and Root, et al[7]—namely, that insulin combined with protamine has a hypoglycemic action, lasting approximately twice as long (7-8 hours) as that of regular insulin. Wilder[8] demonstrated that " * * The action of Insulin Protamine extends into the second and third day as an accumulative action."

The investigations of Scott and Fisher[9] revealed that when protamine insulin was combined with a small amount of zinc the hypoglycemic action was prolonged. This animal work was confirmed by the clinical investigations of Rabinowitch and associates[10] who found " * * that Protamine Insulinate was more effective than regular, but the control of Diabetes Mellitus with the zinc mixture was almost perfect." Also the requirement of protamine-zinc-insulin mixture was approximately 25% less than with protamine insulin alone.

The completed reports, by Peck[11], for 2,286 treated cases, has established clearly the actions of protamine zinc insulin, its indications, and value in the treatment of diabetes mellitus. This product has recently been accepted by the council on pharmacy and chemistry of the American Medical Association for admission to new and non-official remedies[12].

The literature covering the "Clinical Trial Period" has been received by Waring, et al[4] and more recently by Wilder and Wilbur[5].

At the time we began to use protamine insulin* (July, 1936) it was furnished in 2 vials, one containing insulin combined with calcium or zinc, and another containing the protamine buffer. There has appeared objections to the use of protamine because of the difficulties encountered in mixing the preparation and also because of the instability of the original combination. These difficulties have been overcome by the greater stablity of the zinc mixture, which gives a ready-mixed product which doesn't lose its potency for at least 6 months.

When the protamine and insulin are mixed, a fine white precipitate, active principle, forms which will settle out of solution, hence, it must be suspended by shaking before use. Since February 1, 1937, protamine zinc insulin has been on the market.

The prolonged action of protamine zinc insulin is accredited to its minimum solubility which occurs at the hydrogen ion concentration of the body fluids. The suspension slowly breaks down, gradually releasing the insulin. This is further shown by Waring, et al[4], who found that intravenous injections of protamine insulin produced results similar to the intravenous injection of soluble insulin.

The material to be presented represents the data from 15 uncomplicated cases, which we grouped into 3 groups according to the time of day protamine was used; all patients were ambulatory—not hospitalized. With a few exceptions, patients were observed for several weeks before giving protamine in order to standardize them with the old insulin. When it was possible, frequent blood sugar determinations were done but more emphasis was placed on frequent daily urine analyses. All patients were taught to keep an accurate check on the sugar content of their urine, testing 4 or 5 specimens daily. Diets were adjusted to the individual and may be classed as the "moderately high carbohydrate."

The majority of patients used the common household measures to estimate the contents of their diets. This system we believe to be almost, if not just as reliable as the use of scales.

Table 1 is a condensed analysis of each case, and Table 2 is statistical analysis of the combined group. Table 1 shows the grouping of patients. The first group being our first 3 patients who received the protamine insulin at the evening does as originally suggested by Hagedron. The second group, those who received the protamine before breakfast, and the larger second group, who received protamine insulin twice daily. It will be noted that 8 of these 14 patients were not receiving adequate insulin at the time protamine was started, prolonged periods for standardization with old insulin being difficult to accomplish for various reasons.

In this series, there were no untoward symptoms nor reactions from the use of protamine. All the patients had previously been taking insulin, and protamine insulin was started by

TABLE 1

PATIENT	AGE	WT.	SEX	TOTAL OBSERVATION (WKS.)	TIME ON PROTAMINE	APPROXIMATE TIME FOR STANDARDIZATION ON PROTAMINE	DIET C	P	F	Calories	Increase or Decrease	BLOOD SUGAR With Reg. Insulin	With Prot. amine Ins.	URINE CMENS (4 SPECIMENS DAILY) Regular Insulin	Protamine Insulin	REGULAR INSULIN REQUIRED	PROTAMINE-ZINC INSULIN REQUIRED	UNITS OF INSULIN DECREASED	DOSES DECREASED	REMARKS
C.H.	37	145	M	20	19	10 days	180	70	144	2296	None	199-280	113-125	Many pos.	Occas. Pos.	25-10-30*	24-5-25P	11	0	Much Improve
B.S.	19	107	F	9	6	5 "	185	85	75	1750	None	143-215	107-169	Many pos.	Negative	15-10-15*	15-0-15P	10	1	Imp.
F.V.	56	212	M	6	4	0 "	150	60	90	1700	None	266	143	Occ. pos.	Neg.	15-0-15*	10-0-13P	2	0	
C.S.	61	98	F	21	19	6 "	87	50	70	1178	None	137-165	170		Neg.	10-0-10	12P-0-0	8	1	Improvement
E.W.	70	162	M	9	6	0 "	110	50	110	1130	None	105	153	Many 3-4+	Neg	5-0-5	8P-0-0	2	1	Feels improved & 3 poly'd gone.
J.S.	46	247	M	8	5	10 "	135	50	90	1550	−1/4	285	116	Most 3-4+	Occ. trace	25-10-30*	25P-0-30	10	1	Feels imp., 3 poly's gone
M.B.	56	122	F	9	7	?	135	50	90	1550	None	182	166	All 2+	" "	12-10-12*	17P-0-10	7	1	
E.J.	43	152	M	6	5	7 "	118	117	112	1868	−1/6	305	165	Occ. +	Neg	15-13-15	40P-0-0	5	2	Improvement
W.J.	74	161	M	7	6	12 "	273	96	94	2334	None	105	90	Neg	Trace 4 p.m.	15-10-15	13P-10-9P	8	0	
B.S.	19	107	F	11	2(6)	7 "	185	85	75	1750	None	143-215	102	Many pos.	½ + trace	15-10-15*	13P-0-15P	12	1	
S.S.	73	167	F	10	4	0 "	155	50	90	1580	None	143-154	111	Neg	Neg	15-5-15	10P-0-9P	16	1	Nocturia gone
B.T.	29	130	M	5	3	0 "	180	50	120	2000	None	335	111	Many 4+	Occ. 1-2+	20-10-18*	13P-3-20P	12	0	
M.D.	51	136	F	7	6	0 "	150	30	60	1700	None	166	143-166	Occ. pos.	Occ. trace	12-0-8	8P-0-5P	7	0	Imp.
L.H.	34	104	F	4	3	0 "	160	60	107	1890	None	222	200?	2%	Neg.	10-0-10*	10P-0-10P	0	0	Imp.

P: Protamine-zinc insulin. Other numerals = regular insulin (in col. of "insulin required").
*-Patient not receiving sufficient regular for control at time Protamine was started.
Blood sugar readings in mgm. per 100 cc. of blood.

a gradual substitution of approximately 70 to 80% of the required dose of the old insulin and then gradually altering the dose of old insulin, as indicated by the blood or urine sugar findings.

The greatest reduction in the number of units of insulin required was in the group receiving protamine zinc insulin twice daily—being 27%, compared to 17.7% to 18.3% morning group, and evening group, respectively. The greatest reduction in the number of daily doses required was in the morning group, all of whom were able to dispense with at least 1 dose a day, with an average of 46.1% reduction in total number of daily doses. In the group receiving protamine morning and evening only, 33% of patients dropped 1 dose a day, with an average reduction of 12.5% in the total number of daily doses required. Only 1 attempt has been made to give 1 large morning dose to replace 3 daily doses, and this was successful.

In all of the above and subsequent deductions, it will be remembered that the figures are only approximately accurate, because over half of the patients were not receiving the full number of units of old insulin necessary for control at the time the new insulin was started. This is an error in favor of the old, instead of the new, and explains why these results do not show as much advantage of the new over the old as is shown by the figures of Peck[11] who analyzed over 2000 cases. Peck found the average number of daily doses reduced from over 3 to 1.8 daily doses; some authors report a savings of insulin up to 28%. The average savings of insulin for our combined groups is 21.6% and a 24.3% reduction in the number of daily doses.

TABLE 2

STATISTICAL STUDY

Total Cases: 14 Average age: 47.1 yrs. Average period of observation: 8.2 wks. Average period of receiving Protamine: 6.38 wks.

Time of taking P.Z.I.	Number of Patients	Total daily Req. of Reg. Ins.	Total daily Req. of P.Z.I. Insul.	Daily decrease in Insulin units	No. of daily doses Reg. Ins. Req.	No. of daily doses of Prot. Insulin Req.	% dose decrease	No. of patients dropped one dose per day
Evening only	3 - 21.4%	130 u.	107 u.	23 - 17.7%	8 2.66	7 2.33	12%	1 - 33%
Morning only	5 - 35.7%	174 u.	142 u.	32 - 18.3%	13 2.6	7 1.4	46.1%	5 - 100%
Morning and evening	6 - 42.9%	203 u.	148 u.	55 - 27%	16 2.66	14 2.3	12.5%	2 - 33%
Combined groups	14 - 100%	507	397	110 - 21.6%	37 2.64	28 2.	24.3%	7 - 50%

The above analysis reveals 2 of the advantages which protamine zinc has over regular insulin: (1) a saving in the total number of units of insulin required, and (2) the fewer number of daily doses required per patient. The choice of time of day to give protamine depends on which of the above criteria is chosen.

From this small group it appears that if one wishes to cut the number of daily doses to a minimum it is best to give a large dose of insulin in the morning; that has been confirmed by majority of the reports, and is the method of choice. However, if the saving of insulin

is the objective, it appears to be better to use protamine twice daily.

Three of these patients were of the "insulin waster" type, it being impossible to control them with old insulin because of frequent hypoglycemic reactions. By the use of protamine, these patients were controlled, with no hypoglycemic reactions. It is in this type of patient that the use of protamine insulin is most outstanding.

It was found that in some cases, control with protamine was accomplished within a few days —but on an average, it required 4-6 days for the full effects of a given daily dose of protamine to show its maximum effect. One patient showed a gradual decline in urine sugar for 2 weeks, without a change in the amount of protamine. This delayed response to protamine insulin has been termed "the period of accumulative action." Wilder[5] describes a case, where 1 dose was active for 57 hours.

All these patients were ambulatory; hence caution was used in substituting protamine insulin for the old, and in some cases, several weeks were taken to make the substitution. Only a few minor hypoglycemic reactions were encountered. Without exception, all of our patients reported from slight to marked improvement in subjective symptoms. If hypoglycemia occurs it is usually mild, but much more prolonged, hence requires repeated ingestion of food or intravenous glucose.

Two of the cases were elderly, and could be controlled by rigid restrictions in their diets without insulin; however, they felt much better when given a more liberal diet, and insulin. One injection of protamine kept their urines sugar free, whereas, 2 injections of old insulin were necessary.

It is our opinion that protamine insulin is a great help in treating the elderly patients who may or may not be able to control their symptoms by diet. These patients are able to enjoy a more liberal diet with improvement in both subjective and objective symptoms without the dangers of hypoglycemia, with only one daily injection of protamine insulin. It must be remembered that in these elderly persons arteriosclerosis with coronary disease is likely and that hypoglycemia is particularly contraindicated.

The group of patients here reported were uncomplicated cases. We have used protamine in the treatment of cases complicated by severe infections and in a case of xanthochromia, but found that it is best to use the old insulin where frequent or rapid changes in dosage is necessary. However, in the cases where a normal dosage of protamine is already established this can be given and old insulin used for the added requirement. Wilder[5] has described the complimentary use of protamine in the treatment of diabetic coma.

From our study of the use of protamine insulin, we believe it is indicated in the treatment of all cases of diabetes mellitus, either alone or combined with old insulin, with the appreciations that it does not act rapid enough to be used alone for the treatment of coma; but even here it may be used as an adjunct.

It has been suggested by a number of investigators that a large single dose of protamine be submitted for the total dose requirement; but this should be done by gradual substitution in ambulatory patients. Also, Joslin[3] suggests that the new diabetics be given protamine from the start. We believe that it is best, in handling ambulatory patients, especially by the clinician who is not experienced in the use of protamine, to first control the patient with old insulin, then substitute the new.

Our experience has been the same as others regarding the diets. More liberal carbohydrate diets are tolerated and variations in the diet are of less concern on protamine insulin than with insulin. The best results were obtained in those patients who cut down on the number of calories for breakfast and consumed some food at bedtime. This also lessens the chances of hypoglycemia during the night.

Protamine zinc insulin can be used advantageously in the treatment of ambulatory diabetic patients, if the patients are properly instructed and fully cooperative.

Joslin has said, "The most notable advance in the treatment of Diabetes since the introduction of Insulin in 1922, has been the introduction of Protamine Insulin," . . . "It has come to stay and it is a boon to the diabetic."

Summary: Since our findings and conclusions are in keeping with the previous reports for protamine zinc insulin, this summary is a recapitulation of the present status of protamine zinc insulin. The advantages or dis-

advantages of protamine zinc insulin, over old insulin, and some points in its use are:

(1) Protamine zinc insulin produces a more gradual lowering of blood sugar and this lowered level rises more slowly to the previous level, than is produced by old insulin.

(2) PZI* acts over a period 2-3 times as long (6-8 hours) as does old insulin and exerts an "accumulative action" over a period of several days; thus its full effects may not be manifested for a week or longer.

(3 The units required of PZI is considerably less than that of old insulin.

(4) Fewer daily doses are required—many patients requiring only 1 dose, whereas 3 doses of old were necessary.

(5) It affords a means of better controlling severe diabetics, "the insulin waster" and the "insulin sensitive" patients, who could not be controlled with the old, without frequent hypoglycemic reactions.

(6) There is a more even control, hence, fewer periods of acidosis and less danger of coma.

(7) Hypoglycemic reactions are less frequent and less severe when using P.Z.I., but may be more prolonged.

(8) A wider variation in diet is tolerated.

(9) By a single dose, it affords the mild diabetic a more liberal diet, hence, improves the subjective and objective symptoms as compared to restriction in diet or multiple doses of old insulin.

(10) There are no untoward tissue reactions or pain in the site of injection.

(11) There is an improvement in subjective symptoms in nearly all cases.

(12) P. Z. I. is not rapid enough in action to be used solely in the treatment of coma, or other complications where rapid or frequent changes in dosage are indicated; but it may be used in these cases to supplement old insulin.

(13) It should not be used intravenously.

(14) It may be used alone or together with the old; when the two are used together, the peak of their actions should not coincide.

(15) Substitution of protamine for old should be gradual in non-hospitalized cases to avoid complications.

(16) A few less units of PZI should be substituted than were the requirement for old insulin.

(17) Patients should be fully informed as to the difference in actions between the 2 types of insulin.

(18) In standardizing a patient with PZI, the "accumulative action" necessitates close observation and adjustments in dosage of the old to avoid hypoglycemia during this period.

(19) Protamine zinc insulin can be used satisfactorily in the treatment of ambulatory office patients; but it must be used with caution and full knowledge of its action.

*Protamine Insulin used in this work was supplied by The Eli Lilly Company.

*Protamine zinc insulin.

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THE AUTONOMIC NERVOUS SYSTEM; ITS RELATION TO FUNCTIONAL DISORDERS

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OUTLINE

I. Introduction.
II. Definition of autonomic nervous system.
III. Physiology of autonomic nervous system.
IV. Chemical mediation of nerve impulses.
V. Clinical applications to functional disorders.
VI. Summary.

In an attempt to understand patients with functional disorders and to help solve their problems I have been led repeatedly into the fields of psychiatry, endocrinology, and the autonomic nervous system.

Many patients belong to that large class of obscure conditions labeled "functional disorders". The French have called this "the little paper disease" since many of the patients come

in with their complaints written out on little slips of paper. Many of these patients have been thrown into the general class of neurasthenics, psychoneurotics, or endocrine disorders. The great majority are border line cases not presenting clear-cut pictures. Many have organic, with their functional, disorders. Some have been submitted to repeated surgical procedures with incomplete or no relief from symptoms.

The first essential in diagnosis is a painstaking, time-consuming, detailed personal history. Here many physicians fail. When one has spent an hour or 2 with one of these patients he has gained his confidence and possibly an inkling of why his life is so disordered. The history with the physical examination may point to the underlying causes of his disorders. Because so many of these cases have symptoms which point to dysfunction or an imbalance in the autonomic nervous system, and because I have not been satisfied with such designations as vagotonia or sympathicotonia and their treatment—chiefly with sedatives—I am led to discuss this little understood problem.

The autonomic nervous system has 2 divisions: the sympathetic and the parasympathetic. The sympathetic or thoraco-lumbar autonomic nervous system is composed of the ganglions in the thoraco-lumbar region, the nerves arising from these gangilons, and the connecting fibers to the control nervous system.

The parasympathetic or the cranio-sacral autonomic nervous system includes the vagus and sacral nerves. Since the visceral organs are innervated by nerves from both sympathetic and parasympathetic divisions some workers[2] hold that there is an antagonism between these 2 divisions, while others[1] say this is a synergism.

Much clinical theorizing and some serious attempts have been made to apply this knowledge to the problems of functional disorders. In health there is a balance between the sympathetic and parasympathetic divisions and any imbalance is supposed to produce functional disorders. Hence the two terms "vagatonia" and "sympathicotonia"[3] were devised to express supremacy of the parasympathetic or sympathetic divisions respectively.

Centers in the brain have been identified as functionally related to the autonomic nervous system-called central autonomic centers. Examples of these are the vasomotor center located in the upper part of the medulla, the respiratory center, and the center for the regulation of carbohydrate metabolism in the fourth ventricle. Recently Ranson[4] has located a center in the diencephalon which when stimulated elicits responses particularly of the urinary bladder and respiratory system. Other experimental work has suggested that the cerebral cortex likewiwse exerts an influence on visceral functions. Hence in any discussion of the relation of the autonomic nervous system to functional disorders the 3 parts—sympathetic, parasympathetic, and central autonomic centers—must be considered.

In recent years much has been learned about autonomic nervous system, its anatomy, physiology, and the effect of surgery, drugs, and biological preparations upon its various components. Practically nothing is known of its pathology and we are just beginning to understand its functional relationship with the glands of internal secretion[5]. This relationship of the endocrines and the autonomic nervous system seems to have a logical explanation in the theory of the chemical mediation of nerve impulses, which has been promulgated by various workers[6] over a number of years. According to this theory which numerous experimental facts seem to substantiate, the transmission of nerve impulses in the sympathetic and parasympathetic depends on chemical substances. These are acetylcholine and sympathin, the latter being suprarenal in origin but as yet not proven to be identical with epinephrine.

The actions of acetylcholine are various: it is a vasodilator of great strength; in contradistinction to atropine it stimulates parasympathetic nerve endings; its administration results in characteristic voluntary muscle contraction. Acetylcholine is inactivated by an esterase in the blood, and is protected against it by physostigmine in minute doses. That it is liberated at myoneural junctions when the nerve is stimulated has been shown by the carefully controlled experiments of Dale[7]. Evidence also exists that it is liberated at ganglionic synapses. The chemical receptive action of a tissue is attributable to the type of nerve fiber that supplies it. Dale[6] has coined the terms "cho-

linergic" and "adrenergic" to indicate the functions of those groups of fibers of the general autonomic nervous system which liberate acetylcholine or epinephrine (when nervous impulses reach the point at which these fibers terminate in the glands or smooth muscle fibers).

It seems that in the chemical mediation of nerve impulses lies the connecting link between the autonomic nervous system and the endocrine system. Whether or not the functional disorder is due primarily to a glandular disorder, an organic disease, or a nervous imbalance its means of producing symptoms is through the autonomic nervous system and the chemical transmission of nervous impulses. The quieting effect of estrogenic replacement in certain functional disorders, and many other experimental facts[5] suggest a close inter-relationship between the endocrines and the autonomic nervous systems.

Functional disorders too frequently are diagnosed by exclusion; if no definite organic disorder is determined the physician too often prescribes a sedative or tonic and classifies the patient as a neurotic, one of the many who frequent doctors' offices seeking relief. Recently Billings[8] pointed out that approximately 12% of the patients referred for psychiatric consultations were found to have some body disorder either purely incidental to, and playing no role in, the psychiatric problem or presenting only a minor contributive part. Between 5% and 6% of the cases referred during 1 year as presenting function problems proved not to be psychiatric but real somatic disease, ranging from pulmonary tuberculosis, cholecystitis ,and pes planus to brain tumor, which had been entirely overlooked because the case resembled a psychiatric one and usually was diagnosed as "hysteria" or "neurasthenia."

Likewise, Comroe[9] has reported a follow-up study of cases diagnosed as neuroses. Out of a group of 58 patients, 34 had remained about the same, but 24 had developed definite evidence of organic disease within a period of 2 years. In 7 of these, death had occurred and was attributed to abdominal carcinomatosis, carcinoma of the liver, gastric carcinoma, disease of the coronary arteries, Addison's disease, pellagra, and myocardial degeneration. Of the remaining 17 cases in which evidence of organic disease had developed, the diagnoses were diabetes mellitus, gallbladder disease, duodenal ulcer, pulmonary tuberculosis, ureteral stone, chronic appendicitis, cardiovascular-renal disease with hypertension, renal calculus, uterine myoma, pregnancy, mitral stenosis, and toxic goiter All these diagnoses were confirmed by laboratory, roentgen, or operative results. Analysis of previous records in these cases disclosed symptoms which in most instances should or might have led to the proper diagnosis at the time of the original examination. Comroe points out that this is an exceptionally high percentage of mistaken diagnoses and that the diagnosis of neurosis by exclusion is fraught with considerable danger.

It is important, therefore, to recognize the definite characteristics of neuroses or functional disorders. In reality they are an emotional instability out of proportion to actual organic impairment. It is here that a thorough understanding of the autonomic nervous system has proved helpful for, as I have frequently explained to patients, "the control of our emotions was placed in the hands of an automatic regulator and now this regulator is temporarily out of order, allowing the heart to beat abnormally fast, or the stomach and intestines to develop spasms, or producing this feeling of tenseness, etc." The point is frequently overlooked that neuroses and organic pathologic changes often coexist and either may be the forerunner of the other or they may be entirely separate from each other. Diagnostic ability is sorely tried at times to determine definitely and accurately the cause of the patient's functional disorders, but as Fetterman[10] has said, "the addition to medical knowledge by physiologists, neuro-surgeons, endochrinologists, and psychiatrists has been responsible for a newer trend toward thinking of the patient as a whole."

I believe the whole problem of functional disorders is readily understandable if we fix our attention on **emotion** as the motor mechanism—emotion differing from intellectual processes precisely by the degree to which the autonomic nervous system and the endocrines enter the process. A large number of the symptoms are due to vicious circles set up by the autonomic and endocrine disturbances. The emotionally induced disturbances of secretions

and motility of the gastro-intestinal tract are anorexia, indigestion, constipation, colon spasm, etc. Disturbance of the digestive system is followed by malnutrition, which in turn causes weakness and irritability of the nervous system.

To the anorexia and constipation we may add insomnia, the third most common presenting symptom of functional disorders. The insomnia, due to such emotional disturbances as worry and fear, results in excessive fatigability which in turn increases the insomnia; fatigue exceeding the physiologic limit hinders rather than favors sleep. No less important is the fact that fatigue and weakness breed pessimism, which in turn results in unconquerable worry and fear.

Emotion may be visualized as the oscillations between the "intellect" and the somatic processes with the diencephalen as the "switchboard," the autonomic nervous system as the connecting link, the viscera as the loud speaker and the endocrine glands as substations that reinforce and continue the somatic commotion once it is started. Such commotion in turn aggravates the emotional storm so that, unless something is done to allay it, the condition goes from bad to worse. Therapeutically one may break in on the vicious circle at any of several points; but unless one succeeds in removing the primary causative factor the results are generally only temporary.

Summary: Many patients have functional disorders with or without organic disease. The greatest care should be exercised in ruling out organic disease in all sick individuals.

A knowledge of the autonomic nervous system—the sympathetic, parasympathetic, and the cerebral centers which control them—and the relation to the endocrines and such mediators as acetylcholine and sympathin helps one to understand the serious part that emotion, with or without organic disease, may play in an individual's life, and also may point to the proper therapy. Treatment in these cases varies from proper mental hygiene and drug therapy to surgery and prolonged endocrine substitution or stimulation therapy. Each patient must be studied as an individual and not considered as just "another neurotic"

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LYMPHOPATHIA VENERA

(An Increasingly Important Clinical Entity)

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I have a two-fold purpose in discussing lymphopathia venerea. First I tell the nature and character of this relatively new entity, even though it apparently isn't prevalent in this section of the country; and second I wish to clearify the confusion which has arisen in the terminology, or name of this disease.

Although I refer to lymphopathia venerea as a relatively new disease entity, it really isn't so new. As early as 1859 and 1865, 2 distinguished French surgeons, Chassaignae and Velpeau[1], described peculiar cases of adenitis which were probably examples of this malady. Nelaton, Brault and many other foreign surgeons reported similar cases from time to time during the second half of the 19th century. By 1894-96 this peculiar glandular inflammatory disease was recognized as a definite clinical entity, and because it was thought due to climatic influences it was called "climatic bubo" and all texts on tropical diseases had chapters devoted to it. For this same reason it was called "tropical bubo." In 1894 Lejars called it "strumous boboes of the groin." Then in 1913, Nicolas, Durand and Favre set forth the true infectious epidemic nature of the disease, and as a result of their paper many foreign writers have elected to use the term of "Nicolas Favre's disease".[2] However, Nicolas and Favre themselves called it "lymphogranuloma inguinalis" and this, rather than clearing up the mess of names, only increased confusion; because with this name it was, and still is, often confused with "granuloma inguinalis." Aside from both being venereal diseases they are quite different.

Granuloma inguinale causes ulceration of the skin over the glands, without glandular suppuration. It has Donovan bodies in the

large mononuclear cells of the pus. The Frei test (which I discuss later) is negative. The cases respond to treatment with antimony and potassium tartrate given intravenously[3]. Lymphopathia venerea has none of these characteristics.

Finally in 1932 Wolf and Sulzberger introduced the term "lymphopathia venerea" believing that this describes the pathology. This certainly seems the case, and since that time a number of persons have been putting forth their efforts to get adoption of this term. Perhaps the leader in these efforts, a man who has done a lot of the pioneer experimental work on this disease, is one of my former chiefs, at the Graduate Hospital in Philadelphia—Dr. Collier F. Martin. He is now preparing a manuscript on this subject: it is partly as a tribute to him that I have chosen this subject.

The disease itself is a specific, epidemic, subacute infectious entity, believed to be produced by a filterable virus. It is manifest in the male by a suppurative or non-suppurative inguinal adenitis, often with abscess formation and chronic fistulation, and a tendency to heal by retractile scarring and fibrosis. Various inflammatory conditions of the rectum and anus, frequently with multiple ano-rectal and recto-vaginal fistulae, and stricture of the rectum, are more frequently encountered in the female. This difference in the clinical course between the sexes, is due to the difference in lymphatic drainage. In the male the primary lesion is found to be a penile sore, herpetiform or vesicular in type, on the prepuce or near the corona of the glans penis, while in the female the most frequent location is the fourchette, the posterior vaginal wall or the posterior lip of the cervix. The transmission is by sexual intercourse, and the incubation period varies from 1 to 6, with an average of 3 weeks. After the initial sore several days elapse, and then in the male the corresponding nodes of the groin become painful and swollen and suppurate. These nodes then break down, discharge and heal, ad infinitum. In the female, however, where because of its size and location the primary lesion is often overlooked the infection instead of traveling to the inguinal nodes, is transferred to the para or peri-rectal lymphatics, affecting the massive groups of lymphatics traveling to the anal nodes of Gerota[4].

The process then goes on from lymphangitis with round cell infiltration to the formation of miliary abscesses in the rectal wall. The tissues react with loss of mucous membrane as some of the small abscesses perforate into the lumen of the rectum. Fibrosis develops around these miliary abscesses and sinuses. The result is either a band-like or a tubular stricture of the rectum.[5]

After running an indolent chronic course, and especially when the stricture stage is reached, there seems to be no deformity which may not be present—abscesses, fistulae, hypertrophies of the anal and urogenital tissues and even elephantiasis. Many cases show marked deformity of the genito-anal areas, frequently described as lupus exedens or esthiomene (chronic ulceration of the vulva with elephantiasis and sclerosis.) In men a late manifestation may be elephantiasis of the penis and scrotum. Many writers have blamed the elephantiasis and deformities to disturbed lymphatic drainage following operative interference, but the disease itself may cause obliteration of these vessels.

Diagnosis: It is prevalent in the Negro race, but is not limited to that race. A history of a small penile lesion followed by chronic inflammation of the lymph nodes of the groin should make one suspicious. The final diagnosis rests on the Frei test. This is an extremely sensitive and most reliable intradermal test which was introduced by Frei in 1925. It consists in the intradermal injection, usually on the volar surface of the forearm, of .1 c.c. of an antigen prepared from the pulp of a gland of a known case of lymphopathia. It is read in 24, 48, and 72 hours, and a positive reaction consists of an inflammatory papule, red and indurated and often surrounded by a dull red areola. The test is one of the most accurate we have in medicine. In Martin's clinic in Philadelphia, positive reactions have been found in 96.7% of the cases. Frei and others have insisted that the pus for this antigen must be obtained from a patient free of syphilis, gonorrhea, soft chancre, tuberculosis and other diseases which may produce specific or non-specific allergic skin reactions; but this does not seem necessary. In answer to this demand, Dr. Martin in the

article already referred to, characteristically says, "This would seem like looking for virtue in Sodom and Gomorrah, as we have been thoroughly impressed with the fact that the individuals of the Negro race carry about every variety of infection known to Venus and her gentlemen friends."

In the differential diagnosis besides granuloma inguinale, already referred to, we must consider syphilitic adenitis where the lymph nodes are hard and discrete and don't usually break down and where also there is a positive Wasserman; chancroidal bubo, where the infection is acute, suppuration rapid, not much tendency to fistula formation, and there is the presence of Ducrey bacilli; and also Hodgkin's disease, malignancy, tuberculosis, leukemia, fungus growths, and even bubonic plague, but in all of these there is usually positive proof of them by blood count, microscopic examination of smear, biopsy, etc.

The pathologic picture varies grossly from the primary lesion, through the adenitis, suppuration, rectal stricture, fistula and esthiomone and elephantiasis overgrowths. Microscopically there is a profuse cellular infiltration composed of plasma and polymorphonuclears, the latter particularly abundant in the necrotic and suppurative areas[1].

On treatment little can be said, except from the standpoint of prophylaxis. This requires a circulation of information concerning this disease among the medical profession, its early diagnosis, and the prevention of spread by the avoidance of exposure. Measures to control its spread are the same as for any other venereal disase.

Every form of treatment has been tried. Injections of tartar-emetic, non-specific proteins, and intravenous, cutaneous and subcutaneous injections of the Frei antigen, intravenous hydrochloric acid, intramuscular injections of chalmoogra oil, x-ray, etc. So far little or no improvement has been noted. Local surgical measures such as dilation, proctotomy, etc., are of but temporary help, if at all. A permanent colostomy seems to be the best procedure when the ultimaterectal stricture presents itself.

I report a typical case of lymphopathia venerea, that I had the privilege of following while in Dr. Martin's clinic.

A 45-year-old white male of a leading Philadelphia family, apparently contracted his lesion sometime after the war. He went through a long course of inguinal adenitis and suppuration and finally a spread to his rectum with fistula formation, etc. As early as 1929 he had a funnel-shaped firm stricture and was advised to have colostomy. He persistently refused, going along with frequent rectal dilations, mineral oil routine, etc. The stricture finally became much tighter, and the fistulae more wide spread, going even into his scrotum and causing him to develop an acute epididymitis. He could not eat solid foods because of the almost complete rectal obstruction. He lost much weight ,was having severe pain from his fistulae and associated acute epididymitis, and finally presented himself for colostomy, as a final resort. This was done by Dr. Walter Estelle Lee. He made a more or less uneventful surgical recovery and was discharged from the hospital. One month later he had gained 40 pounds in weight, his epididymitis had completely stopped draining. The last I knew of the patient he was going about his daily duties, apparently a well man. Unfortunately, however, this case is an exception, and a great many of the cases, especially the females, do not turn out so successfully.

In conclusion, it is apparent that we are confronted with a disease which is wide spread, of extreme chronicity and devastating in its effects. European authorities regard it as an incurable disease, far worse than syphilis, and ranking close to malignancy. Apparently the only efficient means of control of it lies in preventive medicine, so it is hoped that the medical profession will become more interested in this condition, so as to be better fitted to make an early diagnosis and thus help in preventing its spread.

Summary

A plea is made to discard all the terms of: "tropical or climatic bubo," "the fourth or sixth venereal disease," "Nicolas-Favre's disease," "strumous buboes of the groin," "poradenitis," "esthiomene," "anorectal syphiloma," "genito-ano-rectal syndrome," "lymphogranulomatosis inguinalis," and such associated terms and accept the name of "lymphopathia venerea." This term, if universally adopted, will lead to less confusion, will give a more ac-

curate conception of the disease and yet will embrace the various extra-inguinal localizations that are now recognized as being of identical etiology.

Differentiation is made between lymphopathia venerea and granuloma inguinale.

The disease is discussed briefly from an etiologic, a pathogenic, a pathologic, a diagnostic, and a control standpoint.

The Frei test is presented as one of our most accurate diagnostic tests.

A typical case is briefly presented.

A brief summary of the gravity of the disease is presented.

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PSYCHOALLERGIC INTERPRETATION OF THE NEUROSES AND PSYCHOSES*

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From the Department of Medicine, University of Alabama, and the Department of Research, Bryce Hospital, Tuscaloosa, Alabama. Professor John Ferguson, Department of Physiology of the University of Alabama, has suggested the terms "noustic" and "histic" and has given valuable suggestions and criticisms. We are indebted also to Doctor Kay and Professor Carmichael, Professor McLester, and Dr. W. D. Partlow for their interest and valuable aid in this problem.

The purpose of this paper is to clarify the present concepts of the insanities by the use of biological nomenclature which the psychoallergic theory[1] affords. We shall introduce a new classification on the basis of the above theory, which, however, does not pretend to be complete and final, but does offer a rather different and uncomplicated point of view and one which may prove advantageous to workers in the great field of psychiatry with its psychosomatic relationships.

The current psychiatric theories appear to be involved from the general practitioner's point of view. He has to do daily with such concrete entities as abscesses, fractures, diabetes, and the like. He cannot appreciate the niceties of the Freudian doctrine, nor does he have time or inclination to master the principles of the psychoanalytic technique. These phases of medical practice are referred to specialists in this particular field.

The general practitioner has arrived probably at this point of view, because he sees no direct connection of pathology, such as he learned in medical school, with the abnormalities of behavior, which call necessarily upon psychic mechanisms to explain their operations. Consequently two separate methods of explanation are invoked to describe these two distinct concepts.

A most helpful step would come about if a concept were developed which would help to explain and correlate the modus operandi of the routine biological phenomena with those in the field of psychopathology. Moreover, a concept which could recognize the mechanisms of the psychoanalytic and the behavioristic schools, without contradiction, would help to clarify the problems of the normal and abnormal psychic states. Also, new approaches to psychiatric research might be opened to investigators.

In the present study, time limits us to the problem of the present classifications of psychoneuroses and the psychoses.

II.

How does psychiatry contrast with the other branches of biology? Noyes[2] answers this question very well by stating that "anatomy and physiology are divisions of biology that deal primarily, not with organisms as a whole, but with the structure and operation of organs and their constituent protoplasm. Through integration, as its function of effecting an orderly and harmonious unification is technically known, the nervous system constructs these organs and their functions into a resulting unity known as the organism. This unity or organism, however, possesses new biological qualities and modes of activity not possessed by its component organs, among them being such ones as striving, perceiving, thinking and feeling. The branch of biology which deals with these new qualities and properties as manifested by the human organism, i e., with human behavior and human nature, is now often known as psychobiology, a more accurately characterizing term than is that of psychiatry since it indicates the psychosomatic unity

of the human organism and regards the individual as a biological whole."

The reaction of the individual as a whole has been well described in the field of psychology under the Gestalt theory. In pharmacology, likewise, the reaction of the entire body to drugs, such as atropine or epinephrine, has been described at length by Pletneff[3]. The stimuli which react upon the individual may be of various types: neurogenic, exogenic, organogenic or psychogenic. Then again, there may be combinations of factors. As Richards[4] has written, "The criterion in every instance must always be an individual matter." There are so many variables that it is difficult to accurately catalogue the complex reactions of the individual to the even more complex stimuli. Classifications, therefore, cannot be exact, and elasticity, in their conception, is necessary.

III.

What are some of the dichotomies which are used in the clinic? One of these separates "physical" from "mental" disorders. Bentley[5] writes that "in spite of these differences in physical and mental disease, medicine has persistently tried ever since to deal with the mental sort as if it were a mere lateral extension of the older concept of physical disease and bodily pathology. That has obviously been the most effective way of maintaining a complete and undivided authority in the entire field of psychological, as well as bodily and physiological, derangement."

But where do physical disorders end and mental disorders begin, and visa versa? Can mental orders exist, per se without a physical basis? The neural mechanisms, the neurokyme of the brain, the humoral components of the body and the emotional control of the endocrine organs are to be considered even in pure "mental" upsets. An extensive, excellent treatise on this point is by von Bergmann[6].

Another dichotomy we find clinically is the differentiation between "functional" and "organic." Bentley[7] has written that "within the realm of disease and of morbid anatomy, medicine has no rival. We shall understand, therefore, its reluctance to admit a class of functional disorders revealing no pathological agent or lesion. The more clinically inclined tend to accept this class, while the strict pathologist maintains with a stout heart that the qualification functional is only a concession to our present ignorance, to be removed of course as soon as we penetrate further the anatomical and organic mysteries of disease."

Meyerson[8] writes that "if the term 'organic' is used to mean that there is a structural alteration which can be recognized post-mortem or which during life appears as a change represented by biochemical alteration, I see no objection at all to the term. But frankly I do not understand the logic of the term 'functional' except as a matter of convenience in the subject matter of psychiatry and medicine. I do not know of any function without a structure. From a metaphysical standpoint, structure and function are incomprehensible without each other In fact, they do not exist alone and may be merely two aspects of the great unknown. From a more limited but more practical point of view, no function exists without structure or organic background of some type, even though we may not know the intricacies of the chemo-physical, structural relationship. If we mean by the term 'functional disease' that etiology and pathology are unknown, it would be better to say so. It would seem better to avoid the term altogether and parallel the indefiniteness of our knowledge with the indefiniteness of our classification."

Myerson[9] states that "all dichotomies are to be avoided; just as the separation of the mind and body has no meaning in medicine, so the separation of heredity and environment inevitably leads to false emphasis."

Kay[10] sums the points which we wish to emphasize, by saying that "since we do not try to separate man into what is usually considered mental and what is usually considered physical, neither do we, in order to study him, lift him out of his environment, divorce him from those activities which are going on about him and to which he is closely related, nor do we cut him loose from his hereditary and constitutional background; nor ignore his hopes, plans and aspirations for the future. We study man—a complex functioning dynamic living organism, as a whole, with all of his genetic and acquired atributes and in all of his relations and settings"

IV.

This brings us to a consideration of the psy-

Table No. 1

CHARACTERISTIC	PSYCHOSES	PSYCHONEUROSES
1. Genesis	similarity	similarity
2. Distortion or disorganization of personality	distortion great	essentially intact
3. Ability to discriminate between subjective experiences and reality	greatly impaired	no grave interference with reality testing
4. Type of thinking	dereistic	dereistic not present
5. Delusions	common	may have over-valued ideas but not delusional.
6. Associations	frequently disturbed	unimpaired.
7. Projection of motives and trends	often projected	not externalized, only in form and degree occurring in normal person.
8. Repressed impulses and fantasies	repression destroyed	maintainance of repression.
9. Autonomy of complex	much greater	not as great.
10. Conation	profoundly disturbed	only slightly disturbed.
11. Changes in affect	may be great changes	slight changes.
12. Changes in affect lability	often greatly decreased	lability maintained
13. Interest in outer world	lost	maintained
14. Repression	may be extreme	not important.
15. Recognition of mental illness	no recognition	recognition present.

choneuroses and the psychoses. In this discussion, we do not consider those psychoses which are caused by toxic, infectious, or pellagric states; rather, we shall limit comments to schizophrenia and the manic-depressive states.

Clinically, the abnormalities of the psyche are divided into two great divisions, the psychoneuroses and the psychoses. We shall not burden the reader with a tedious classification of the intricate components of each division. Rather, the point, which we wish to discuss, is the essential factors of differentiation between these two great orders.

Strecker and Ebaugh[11] state that a psychoneurosis is essentially different from a psychosis in that the psychotic is "profoundly shaken in whole personality and sometimes disintegrated . . . while in the psychoneurotic there is only a partial personality altering and environmental contacts remain real and relatively undisturbed." Meyer [12] states that the psychoneurotics are partial-reactions, half way between normal and the psychotic, while the psychotic patient is to be regarded as a total-reaction. Strecker and Ebaugh[13] point, also, to the capacity of the insight as functioning in the psychoneurotic, in that the patient retains the ability to "stand off and look in, survey, and judge, if not understand; here, the psychoneurotic overwhelmingly demonstrates his freedom from psychoses."

Wechsler[14] apparently agrees to this differentiation but adds that the psychoneurotic's symptoms are unconsciously determined and that his behavior actually represents an attempt at adjustment. He goes on to state that the psychotic patient "has broken with the group and has become anti-social"

Noyes[15] made interesting differential diagnoses of these conditions, which we shall summarize by means of table No. 1

Yellowlees[16] adds that neither group exhibits morbid histology or pathology, and that psychoneurotics recover, but psychotics do not. He states that neurotics "are made and not born," but that psychotics "are born and not made." But, if that is true, why do manic-depressive patients many times show a recovery or an apparently normal period?

In Tice's "Practice of Medicine[17] we note

that all the types of "functional" nervous disorders are "necessarily psychogenic," yet the division of these disorders into the psychoneuroses and psychoses "is pragmatic because of the differences in the relations with society which result, yet is nevertheless symptomatic and not genetic."

In clear-cut cases, this division is not a difficult step, but as Riddock[18] states, "all will, however, admit the difficulties of differentiating psychoneuroses from early depressive psychoses, and there can be little question but that many cases labeled as neuroses are really examples of psychotic depression, either mild or at the prodromal stage."

Wechsler[19] adds that "it is more difficult to differentiate between neuroses and borderline psychoses. Hypochondria may represent a mild neurosis or the early manifestations of melancholia, schizophrenia, or paranoia. In simple hypochondria there is little insight, but there are no marked delusions or hallucinations; the patient is not anti-social, and fair adjustment is still possible—the compulsive neurotic is sane, the delusional patient insane —neither has control over the fixed idea."

In a series of lectures, Galdi[20] continually emphasizes the vagueness of the words "neurosis," "neuropathic diathesis," etc. This brings us to the point of determining just when a person is insane and when he is normal. Probably this is a matter of opinion which has been obtained by clinical observation. Some observers have mentioned that they can "spot" a patient and can thus classify him in one or the other group. They explain that the patients suffering from neurosis have a more normal look than do the psychotic patients. Furthermore, the manner in which the patients conduct themselves, aids in forming their opinions as to a diagnosis.

However, this ability seems a bit unfounded in the light of what Myerson[21] has noted. Myerson takes the attitude that this division of the psychoneuroses and psychoses is not a static one; rather, one patient may change from a neurosis to a psychosis, and so on. He writes that "certain of the psychoses evolve from the neuroses and consequently merely represent an extension of the pathological process. Thus, a person who has a feeling of unreality may pass into a declaration of unreality; in other words the feeling of reality becomes delusional. A patient who has hypochondriacal fears may develop somatic delusions. In fact, the same individual at different times of the day may easily be classed as a neurosis and at another time as a psychosis. . . I have many case records in which at one period of his life a patient has passed through various phases of the neurosis and as time has gone on has finally developed a psychosis which in no way differed from the neurosis except in the intensification of the symptoms. Moreover, I have had patients who have recovered from a psychosis and have been discharged from hospitals and have gone back to the neurotic phase, the psychosis being merely an episode of intensification of symptoms."

Such has been our experience. Moreover, one psychiatrist may diagnose a patient as a psychoneurotic, while another labels the patient as psychotic, although no time has elapsed for the patient to have had an opportunity to change his reactions to environment; both psychiatrists were side by side at the time of the examinations.

Why is this discrepancy in diagnosis? The diagnostic acumen of these men is unquestioned, but the differentiative points, which separate the psychoses from the psychoneuroses, is apparently not so easy to apply. Furthermore a much greater difficulty is noted in differentiating the various psychoneuroses Two observers diagnose a conversion hysteria in a particular care, while three others call it anxiety hysteria. Perhaps one group is correct but then again, possibly both groups are wrong due to the fact that the present classification, which is now in use, is not an adequate instrument, nor precise enough to accurately catalogue or classify diseases of the psyche as they actually exist.

V

What has the psychoallergic concept of mental diseases to offer?

For a short review of this psychoallergic concept, which propounds a correlating mechanism for the field of psychology and biology, and which operates on the laws of allergy, paralleling the phenomena observed in the field of psychology, we shall mention some pertinent facts of psychosomatic import.

Object, actions, situation[22] or even key words

or symbolic setups, are to be regarded as psychoallergens, capable of precipitating an emotional reaction in a person previously sensitized to these factors. Just how do these psychoallergens affect the body? Cannon[23] summarized the role of emotion in the production of disease, and has presented the important concept of a definite change as having taken place regarding the incidence of disease in this country. He states that "serious infections, formerly extensive and disastrous, have markedly decreased or almost disappeared, and that meanwhile conditions involving strain in the nervous system have been greatly augmented. The nervous system is all-persuasive. It can have effect in remote and secluded portions of the body, with few if any obvious lesions. Because it is universal in its effect, disorders which involve the nervous system require consideration of the organism as a whole."

We much prefer to regard the so-called conditioning the production of a psychoallergy, as psychoallergic upsets, exemplified by the finding of complexes by the word association tests, etc., seems to prove this concept. Thus we can review the vast literature for examples of psychoallergic upsets and discover that emotional conflicts, the results of the production of psychoallergic states, bring about organic changes in the body. A few examples of this may serve to illustrate our contention. Lutzenkirchen[24] describes a case of adiposogenital dystrophy in a young woman who complained of headaches, polydipsia, frigidity, obesity and atrophy of the genital organs. She had repeatedly quarreled with her husband whom she had married against the will of her family. She obtained a divorce, recovered completely from her syndrome after a few months and then resumed marital intercourse with another man.

Fremont-Smith[25] notes that a direct relationship has been found between emotional stress and the precipitation of convulsions.

For other illustrations of psychosomatic disorders, see H. Flanders Dunbar's recent work[26] and a symposium by medical specialists[27] while although not particularly recent is an important and interesting work.

With this short introduction, we shall describe the psychoallergic approach to the understanding of normal and abnormal behavior, with special emphasis on the insanities. Below

Table No. 2

Each individual contains:

- Past experiences (previous sensitizations)
- Central nervous system
- Metabolic type
- Humoral-immunological mechanism
- Autonomic nervous system (inc. vasomoter outflow)
- Hereditary properties
- Presence or absence of disease
- Age factor
- Type of diathesis
- Mechanisms of internal secretion

Normal reactions

Production of routine hypersensitivity

1. Noustic types
   a. Processes of learning
   b. Suggestability
   c. Hypnosis
2. Histic types
   a. Bodily habits, as contraction of stomach at meal time.
   b. Bodily reactions to situations, odors, and various associations.

Psycholalergens continually act upon the factors of of the human body. Essentially psychic in type and include:

1. Suggestion
2. Persuasion (hypnosis)
3. Symbolic stimuli

Abnormal Reactions

Production of psychoallergy

1. Subtotal stage (maintains contact with outside world)
   a. Noustic
   b. Histic
   c. Mixed
2. Total stage (Essentially noustic)—breaks off contact with outside world.

is a diagrammatic conception of the psychoallergic mechanisms.

Although the diagram is self-explanatory, we explain the terms employed in it.

Regarding the abnormal reactions, as those which interest us at the present time, the psychoallergic reaction is divided into 2 stages, the incomplete and the complete manifestations. A patient who exhibits the subtotal reaction, recognizes the surrounding of his environment. He is aware of that which is going on about him, although he may misinterpret the meaning of it. On the other hand, the individual in the total stage has broken contact with his environment and apparently is unaware of that which is going on about him. As the arrows indicate, between these two states, the reaction is reversible and seems to follow the rule described lately by Myerson[28] who states that "in a single hour a person may vary from a psychosis to a neurosis and back again."

As to the types of reactions in terms of symptoms, we have divided these into 3 types, i. e., **noustic**, referring to the mental type of symptom or complaint and **histic** ,referring to tissue or organs. The mixed types is self-explanatory. There are many reasons why "somatic' 'and "visceral," "nervous" and "mental" terms have been avoided. We think that these new terms do not have the stigmata of the other nomenclature and should explain adequately the two types of symptoms which patients offer. Naturally, the total stage probably offers the noustic type in preference to the others because the patient is ex-communicado with his environment.

Why make such a division? From a psychoallergic point of view, so far as theory goes, the patients in the subtotal stage apparently possess enough resistance to partly compensate for their difficulties. This state, then, represents a partial attempt at compensation by the individual, who has been made hypersusceptible by the described forces. On the other hand, the patient in the total state, has not been able to offer a partial compensation, and consequently, is swept into the more severe type of reaction Just as patients, who suffer from extreme paroxysms of allergy at various times of the day, show a remission at times, so the patients who show the total state of psychoallergy have a remission to the subtotal stage. The factors which control these remissions are not yet known. Rabiner and Kerschner[29] have shown an evolution of organic nervous diseases in 2 phases, namely, an early psychic phase, and a late organic one These observers state that the transition between these 2 phases may be almost imperceptible, being only detected after prolonged observation by the same observers. Also, during this transition, there may be structural changes in the nervous system resulting from disturbances of function during the first or non-organic stage. They state that not only may structure affect function, but also function may influence structure.

Lunt[30] describes the psychoneuroses which show symptoms essentially physical in character as being those of the neurosthenic type. When the symptoms are primarily those of feeling and thoughts, it is of the psychasthenic type.

We prefer to attach the term "histic" to the first group, as this means the symptoms which are essentially physical in nature. When symptoms are those of feeling and thoughts, we prefer the term "noustic." Thus, the classification remains simple and does not offer complicated concepts of the psychoneurotic divisions.

How can this be applied therapeutically[5]

We know that desensitization has been effected in the allergic field by- non-specific measures. Peptone, typhoid vaccine, etc., has been employed by various workers with some success. We are now running a series of experiments to ascertain if a general desensitization can be accomplished in patients who suffer from psychoallergic upsets. A psychic desensitization may be accomplished through psychoanalysyis or some other psychotherapeutic measures, but a general desensitization by physical agents is a new concept.

As to the other methods of attack to the solution of this problem, the answer has not been forthcoming as yet. Perhaps other workers will add their experiences and suggestions to this theoretical concept of the insanities, so that workers will have additional methods of approach for this complex state of abnormal human behavior.

Summary

The theory of psychoallergy has been reviewed along with the differential diagnosis

of the insanities. The point has been stressed that the divisions of psychoneuroses and psychoses are not static in nature and may change from time to time.

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BIRTH OF TWO MALFORMED FETUSES, ONE A TWIN, TO SAME MOTHER

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The comparative rarity of the birth of monstrosities or deformed fetuses to the same mother impels me to add this interesting case to the literature.

A native white, housewife, 26 Years of age, came to my office on June 2, 1936, with her husband requesting an abortion on the grounds that her last pregnancy had terminated in the premature birth of a monstrosity and that her attending physician at that time advised her not to have another child. I assured her that it was most unusual for such a condition to recur, and persuaded her to go through with the pregnancy. She expected the birth on December 16. She had had one normal delivery, a boy 7 years of age. There had been only 1 intervening pregnancy, which occurred 5 years ago At this time she did not consult a physician until premature labor—7 months—commenced. She was delivered of an anencephalic monster the abdomen of which was patent from chest to rectum (her statement).

Examination of her urine on June 2 showed no albumin, no sugar and no pus. Blood pressure was 116/66 and weight 119. I did not see her again until Sept. 15th, blood pressure was 122/64 and weight 139, the urine had many bacteria but no pus, albumin nor sugar. She complained of burning and frequency. She was given pyridium, and this condition was relieved.

Sept. 24th, blood pressure was 124/64 and weight 143½. One fetal heart was heard in lower right quadrant, rate 140. Her feet were swelling at night.

She was seen every 2 weeks. Her blood pressure gradually rose to 140/80 and her weight to 150 on November 16th. No other changes were observed except she now had slight headaches, swelling of feet at night, and occasionally of face. On this date she was put to bed, on forced liquids and quiet. She was seen daily, with no remarkable change in her condition, and never showed any albumin in the urine.

Blood pressure on November 17th was 138/76, on the 18th 140/80 and on the 19th 138/84.

On November 24th she went into labor at home and delivered a 4-pound normal female baby, head presentation. A second cord prolapsed. Our first suggestion was a plural pregnancy In a few minutes, without traction, an end of the cord came away without any attachment. I then delivered, head presenting, a second baby which cried lustily at once. It was larger, fatter, of better color than the first. The abdomen, however, was patent from the umbilicus to below the genitals. There was no sign of tearing; the edges of the wall were smooth and did not bleed. The child appeared

to be a male or an hermaphrodite. The bladder was ruptured to the right of the midline and ballooned when the infant cried. The intestines protruded to the left of the midline. Two meati were found, but I could not decide which was the urinary meatus. I closed the abdomen by emergency sutures. A few hours later meconium was discharged through one of the meati. Bowel movements continued through this opening as long as the infant lived. For a few days the infant nursed from breast and bottle. Then persistent vomiting commenced, the wound broke open, and the baby died. The first infant has done well and shows no abnormality. Both cords arose from the same placenta.

Summary: I report a twin birth, 1 infant of which was deformed, to a mother who had previously given birth to 1 normal child and 1 anencephalic monster.

Comment: The father and mother are apparently normal and healthy. Does this indicate defective germination, or may it be a mere coincidence, prompted by the twin births. In refutation of this latter thought, it should be remembered that the deformed infant was the better nourished and larger of the 2 at birth.

BURNS

Two Case Reports of Extensive Burns in Children; Both Recovered; One with Curling Ulcer

W. P. SHERRILL, M. D.
Phoenix, Arizona

(Read before the February, 1937, Staff Meeting of the Good Samaritan Hospital).

The 2 cases of burns reviewed tonight are interesting not only because of their extent but because they illustrate about all the complications reported in the literature. They also bring up that much debated question of treatment and the rationale behind it.

When a patient is burned the surgical history may be divided into 4 periods: shock, reaction, toxemia and recovery. With a burn of any extent a certain amount of shock is inevitable. It may be scarcely appreciable or it may result in death within a short period. Usually the larger the burn and the younger the child the more serious is the shock. It is noteworthy that occasionally a relatively small and superficial burn will give a disproportionate degree of shock. It is said that burns over the chest and abdomen are apt to be associated with greater shock than those involving the extremities.

Harkins has recently reported the results of a vast amount of experimental work to determine the cause of shock. The results indicate that the loss of fluid from the blood vessels into the burned tissues is a factor in the production of shock. Accompanying the collection of fluid in the tissues is a simultaneous increase in the concentration of blood—shown by an increase in the percentage of hemoglobin and in the hematocrit readings. After most of the fluid has accumulated, the fall in blood pressure sets in and continues rapidly until death occurs in secondary shock.

Following shock in cases where death does not immediately ensue, there are several days in which the patient's general condition is apt to be deceiving. They look good, and while the pulse is usually rapid it is of good quality. There may be a moderate rise in temperature. Prognosis at this stage is always doubtful.

Following this period, the various manifestations of toxemia appear. The patient is restless; the skin clammy and slightly cyanotic. Delirium, or even convulsive siezures, may follow. Pleurisy or pneumonia are the complications to be feared in burns of the chest; persistent diarrhea is not uncommon in burns of the abdomen. It is during this period that nephritis frequently develops. There is apt also to be a concentration of the blood with high hemoglobin and increased number of red cells. If the outcome is satisfactory there is a gradual subsidence of symptoms and a period of convalescence which depends on the extent and depth of the burns.

The various symptoms of extensive burns have long engaged the attention of investigators in the fields of physiology, pathology and clinical medicine. Many theories have been advanced to explain them. The most plausible of these theories are: interference of function of the skin, alteration of blood, and toxemia. Of these, the latter has the most convincing evidence to substantiate it.

The symptoms following a burn strongly

suggest the clinical condition described by the term toxemia which implies the presence in the circulation of some toxic agent. Experimental work definitely suggests the formation at the site of a burn of a toxic substance, the absorption of which is responsible for the constitutional reaction.

Reiss succeeded in isolating from the urine of burned patients a substance toxic for animals which had many of the properties of pyridine. Vogt observed that when parabiosis was established between 2 animals and 1 of which was burned, the other showed evidence of toxemia. The symptoms in the burned animal were observed to be less severe under such circumstances than when it was alone. It was further demonstrated that toxic symptoms did not develop in the unburned animal when it was separated from the burned animal within the first 12 hours, but both animals finally died of toxemia when left united.

Robertson and Boyd have demonstrated the toxicity of the products of protein autolysis in burned tissue. They further showed that the toxin circulated in blood was absorbed by the erythrocytes, because whole blood was found to carry the toxic principle while blood serum was found poisonous only in enormous doses when given intraperitoneally to guinea pigs.

During the years just prior to 1925 the late Edward C. Davidson of the Ford Hospital had occasion to treat numerous extensive superficial burns occurring at the Ford Body Painting Department. Appalled by the terrific mortality and generally unsatisfactory methods of treatment, he began a systematic study of the subject. As a result of this study he concluded that the rational manner of combating the toxemia lay in some form of local treatment which would prevent the absorption of autolytic products of protein decomposition. Of all the coagulants tried, tannic acid was found to be the most efficacious. Results with this treatment were so far better than by any other method that this has now become the standard in most hospitals.

The numerous advantages of this method of treatment over the old methods have been enumerated by Davidson as follows:

1. The preliminary treatment of burns with tannic acid, followed by exposure to air, lessens toxemia.

2. Tannic acid as an initial dressing is analgesic.

3. The subsequent use of the open air method causes minimal trauma and promotes general comfort.

4. The local astringent effect prevents loss of body fluid.

5. Scar tissue formation has been less marked than that observed after treatment by other methods.

6. The protective layer of coagulated protein forms a scaffold for the growth of the young epithelial cells over the burned area.

Davidson's work aroused a new and enthusiastic interest in an old subject in which, for many years, few advances had been made. McClure collected the results of a number of authors and found that with methods of treatment other than tannic acid ,that in 911 cases the mortality was 30.8%. In 742 cases treated with tannic acid the mortality was only 12.%.

Coan, in 1935, suggested the use of ferric chloride as the coagulant. He states that it shows the same advantages as tannic acid, with certain definite points of superiority, especially in providing for early mobilizaton of joints. The coagulum with ferric chloride is said to be thinner and more pliable and is more tenacious than that of tannic acid. The coagulum frequently remains in place for 3 to 3½ weeks.

Bettman, in 1936, suggested a primary application of tannic acid followed by an application of silver nitrate. He claims that this coagulation is much more prompt and gives results better.

Regardless of the coagulant used the principle is the same. Case No. 1 is a 14-months-old baby who pulled a perculator of boiling coffee off of a table onto her head. Second and third degree burns occurred on the entire left side of the face and head, the entire neck, chest, upper half of the abdomen, both arms and hands, legs anteriorly and half of the back. The skin was vesiculated and denuded over all the areas. The child was immediately brought to the hospital and fluid was forced by all possible means. The burned areas had been covered with vaseline. After the primary treatment of shock, the vaseline was removed and the treatment with tannic acid begun. Morphine was administered as liberally as possible for a baby of this age.

Twenty-four hours after the burn, the child became extremely restless and had a convulsion. For the next 18 hours the child's condition was desperate. Numerous other convulsions ensued. On 2 occasions respiration ceased. Oxygen and carbon dioxide were administered by artificial respiration. The child eventually began to breathe properly. There seemed to be a sort of crisis, for within a few hours' time the child regained consciousness, became quite comfortable and lost its tremendous restlessness. For the next week there was a continued improvement in the general condition. After this time restlessness increased and the child did a great deal of straining. This abdominal discomfort lasted for 4 to 5 days. On 1 or 2 occasions a dark substance was passed—probably blood. Unfortunately the stool was not sent to the laboratory. The next few days there were many semi-fluid stools—as many as 12 or 13 per day. As stated before, many persistent cases of diarrhea have followed burns of the abdomen. On the ninth day of illness, the tannic acid coagulum began to loosen in many places. Cod liver oil dressings were applied to the unhealed areas. For the first 4 weeks the child's temperature ranged from 101 to 103 and gradually subsided as the burned areas healed. On the 21st day of illness the child became very restless and was obviously in great pain. She held one hip rather rigid to protect it. Due to the fact the leg near the hip was burned, no great significance was attached to the fact at the time. Frequent urinalyses were done, but at no time was anything, beyond a trace of albumen, discovered. On the sixth day of illness, due to concentration of the blood, a transfusion was given.

Case No. 2 is that of a boy 6 years old. He managed to get his clothes, which consisted of only a pair of "levis," soaked in gasoline and inadvertantly struck a match. He had the presence of mind to roll about 20 feet into an irrigation ditch, filled with oozy mud, and extinguished the flames. He received third degree burns of the entire left leg, foot and the medial half of the right leg. He had second degree burns over the entire abdomen, anterior chest, left side and chest posteriorly to about 3 inches beyond the mid-line, both arms and hands, the left side of the face and neck and the penis and scrotum.

Tannic acid was applied as soon as the mud could be washed off and the patient cleaned up. Morphine was administered generously and fluids and saline solution forced to the limit by all possible means. For 48 hours the condition was desperate, but on the third to the sixth days the general condition was surprisingly good. On the seventh day he complained of abdominal pain. The following day a dark, bloody stool was passed and abdominal pain increased. On the ninth day such large quantities of blood were passed that transfusion was resorted to. Small, decreasing amounts of blood were passed daily for 5 days. As the blood lessened, so did the abdominal pain. From the findings a diagnosis of Curling's ulcer was made.

Curling's ulcer is very largely an unknown lesion. If it is mentioned at all in the textbooks, the description is of a very cursory character. This is partly due to the fact that it is seldom recognized during life; partly because its incidence is variable and rather low, and because it is most frequently found in children.

Curling, in 1842, first described duodenal ulcer associated with burns as a clinical entity. The symptoms, as he names them, include pain and tenderness to pressure on the right side, midway between the cartilage of the ribs and the umbilicus, poor digestion and vomiting. When ulceration ensues, the stools are dark and bloody. In acute cases, either hemorrhage or perforation may be the initial sign, or there may be no symptoms.

It has long been recognized that while these ulcers might exist anywhere in the intestinal tract, they were most common in the first portion of the duodenum. Pack, in 1926, described the histopathology as follows: "They may vary in size, from a pinhead to a quarter, and the amount of tissue loss depends on whether the lesion is a mere erosion or a rapidly, sloughing, perforative process. The ulcer is frequently funnel-shaped, due to loss of more mucous membrane than muscle tissue."

That the mortality from the ulcer is extremely high has been brought out by Fitzgibbon. In 1932 he made a complete search of the literature and could find but 3 cases with re-

covery. He reported a fourth. To that small group, I add this one.

This patient, in addition to his ulcer, also developed a severe nephritis and for days the urine was wine-colored. This gradually disappeared as his condition improved.

During healing, contractures about the knee developed, requiring orthopedic care, but at the present time his recovery may be said to be complete.

(Dr. Guy French was associated with me in the treatment of case No. 1.)

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director, New Mexico State Department of Public Health

New Laws

The thirteenth New Mexico legislature has just closed its regular session. A bill was passed providing for the sterilization before release of insane and feeble-minded persons likely to produce a child or children who by reason of inheritance would have a tendency to serious mental disease or mental deficiency. Another act provides for voluntary committment to the insane asylum.

Laws were made which will raise the standards of dental practice and of the nursing profession.

The model basic science law of the American Medical Association was introduced into the House but proceeded no further. Among other bills that failed was one to provide hospitalization for the indigent tuberculous and another requiring blood tests before the issuance of marriage licenses. The former probably foundered because it carried a $50,000 appropriation. The latter showed unexpected strength in the house but was shelved by the senate. However, the publicity attending its introduction and debate has resulted in a large increase in the number of blood specimens received at the state laboratory.

A bill was introduced into the senate to license chiropodists The definition of chiropody was as follows: chiropody means the diagnosis, electrical, mechanical, medical and surgical treatment of all ailments of the foot and leg, other than the amputation of the foot, leg, or toes. The writer of this column was called upon by the senate committee to give evidence as to the effect on the public health of this bill and laid down the following proposition: that when the state licenses a person to treat a limited area of the body, they must assure themselves (1) that he is thoroughly competent to treat the local conditions concerning which he claims special knowledge and (2) that he is restrained from treating disease in other parts of the body and from treating purely local manifestations of a constitutional disease to the neglect of that constitutional disease; as a safeguard to secure the public against the latter contingency I proposed that the majority of members of the board of examiners should be members of the medical profession and that the board have power to issue regulations and to revoke licenses for cause.

The bill was amended in the senate but not sufficiently to make it acceptable to the house.

A bill was passed with the emergency clause, so that the act took immediate effect, establishing a separate board of public health. The act also modifies existing public health law in certain respects notably in regard to registration of births and deaths. The board of public health is forbidden to make rules that prohibit any member of the healing arts from making death certificates. In other words, it is now legal for a chiropractor in New Mexico to sign death certificates. The new board has already met and elected as president E. W. Fiske, M.D., F.A.C.S., of Santa Fe, and as secretary Mr. E. P. Moore. Other members are Eugene Simms, M. D., Alamogordo; M. K. Wylder, M. D., F.A.A.P.,, Albuquerque, and Mrs. Tobias Espinosa, the wife of Tobias Espinosa, M.D., of Espanola.

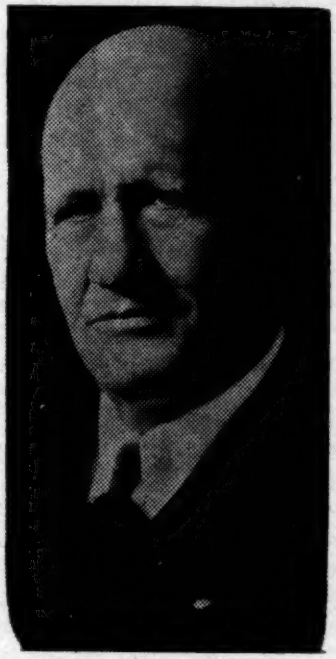
DOCTOR BEN MOEUR—PHYSICIAN AND STATESMAN

On March 16 at one o'clock in the afternoon, there passed the life of the kindly, honest, courageous and unselfish family physician and former governor of Arizona. These two activities cannot be dissociated, when thinking of Benjamin B. Moeur. He viewed social and political questions with the same mental straightforwardness and acumen which characterized his professional work. Avowedly ignorant of and not interested in the devious

ways of practical politics, he was persuaded by friends to accept the nomination of the state in 1932 by the plea that "Arizona is sick and needs a doctor." This appealed to the adventurous spirit which had motivated his whole life and "Doc Moeur" went into the campaign with his characteristic vigor and enthusiasm. He was a successful governor. If he made mistakes, they were errors of a physician treating a desperately sick patient. In such emergencies, heroic measures have to be used, sometimes even experimental measures. He gave to Arizona freely of his time, his experience, his means, and finally, his very life. His closest friends know that he worked and worried when strength was not there, with a determination to see his job through, and that his life was definitely shortened by this four-year strain. When Arizona, like other fickle patients, decided to change doctors, he was as gracious as he always was in his professional work. He bade the patient God-speed, welcomed the new doctor on the case and stepped aside. Newspapers commented freely on the unusual and unprecedented event, when the ex-governor in person welcomed the incoming governor. That was not only characteristic of Benjamin Moeur, the gentleman but of Doctor Moeur, the physician. Ethics of medical practice demand this and the incident only illustrates how the habits of thought and action, followed through 40 years of medical practice, were ingrained and influenced all his public actions.

Biographical sketches of Doctor Moeur have appeared in every newspaper in Arizona. The outstanding facts in his career are these:

He was born in Tennessee in 1869, the son and the grandson of physicians; four years later he moved to Texas, and, as he often boasted, "punched cows from the time he was 6 years old until he was twenty." He then went to the University of Arkansas to follow out his ambition of studying medicine. After his graduation he came to Arizona—in 1896—serving for a few months as staff physician at the Copper Queen Hospital in Bisbee; he then came to Tempe, where he and his young wife settled and established the home in which his four children were born and grew to manhood and womanhood. He not only helped to build the community in which he lived, but his personal and professional influence was far flung. It was astonishing the territory covered by him in his practice, in his 2-horse surree and on horseback. His favorite mode of travel, until automobiles came into use, was a pair of fast trotters, frequently changed. The writer recalls meeting Dr. Moeur in consultation near Glendale, approximately 16 miles from Tempe over a miserable dirt road and with the river ford to negotiate. He arrived by 10 o'clock with horses caked in sweat and dust, and cigar going full blast. After the consultation he drove back to Tempe. It is recalled that he said this team would not be used any more that nor the following day. He kept from 4 to 6



such teams in use constantly. He made calls as far from Tempe as Buckeye, a distance of 50 miles, much of it through sand and all of it over dirt roads, as the macadamized roads were not then common in this district.

Only the closest friends of Dr. Moeur knew what a bereavement he suffered in the death of his son, John, educated to take up the professional work when his father should lay it down. Savings of years went into the unavailing effort to stay the progress of tuberculosis which finally wrecked the hopes of a life time in that respect.

Doctor Moeur garnered no material rewards

for his 4 years as governor of Arizona. He supplied his own automobile and paid his own chauffeur. He gave freely of his means as well as his time, and came out of this service poorer by many thousands of dollars.

Truly Arizona can say of him as we have reason to think the Great Ruler will say, when the time comes for striking balances: "Well done, thou good and faithful servant."

—W. W. W.

NEWS ITEMS

The president-elect of the Arizona Public Health Association is Dr. G. F. Manning of Globe, who is also on the executive committee.

Dr. A. N. Crain of Phoenix is a member of the executive committee of the Arizona Public Health Association.

Marion E. Stroud of the state public health laboratory in Phoenix is secretary-treasurer of the Arizona Public Health Association. Other lay persons interested and active in the association are C. N. Boynton of the Pathological Laboratory of Phoenix, Jane H. Rider of Tucson, Esther Braddock of Prescott, David Treat, of Phoenix Union High School, Helen Bocock of the University of Arizona Infirmary, Helene Bennett of Thomas Laboratories of Yuma.

Dr. G. F. Manning, director of the public health service of Gila County has returned from a six weeks' course of study at the University of California in Berkeley and will resume his work with the county immediately.

Dr. B. M. Berger addressed the Maricopa County Bar association during March. His subject was "Treatment at the Arizona State Hospital and Operation of the Institution."

It is reported that Dr. Coit I. Hughes, Phoenix, will succeed Dr. George C. Truman as state superintendent of public health. Dr. Truman of Mesa concluded his term on April 6th.

Dr. J. D. Hamer of Phoenix, injured three months ago in an automobile accident, was able to return to his office on the 14th of March, for the first time.

Dr. W. A. Hoit, one of the members of the program committee of the Gila County Chamber of Commerce, attended a meeting of that organization during March.

Dr. A. C. Kingsley, consulting physician for Phoenix Junior College, will be at the college from 8:30 to 9:30 o'clock Monday, Wednesday and Friday mornings during the remainder of the semester.

Dr. Charles Borah and Miss Josephine McKellips, both of Phoenix, were married March 5th at the home of the bride's parents, Mr. and Mrs. C. H. McKellips.

Dr. and Mrs. O. E. Utzinger of Ray, Arizona, were visitors in Phoenix during March.

Dr. C. Cron of Miami, presided at the meeting of the Gila County Medical Society held in Miami during March.

Dr. T. C. Harper of Globe, was elected as a delegate to attend the Arizona State Medical convention in Yuma, at a meeting of the Gila County Medical Society during March.

Dr. R. D. Kennedy of Globe, was elected a delegate to attend the Arizona State Medical Convention in Yuma, at a meeting of the Gila County Medical Society during March.

Dr. Nelson D. Brayton of Miami, spoke on health measures introduced in the legislature at a meeting of the Gila County Medical Society during March.

Dr. A. N. Crane, director of the Maricopa county health unit, returned to Phoenix the last of March after attending a special school in public health administration at the University of California in Berkeley.

Dr. M. I. Leff of Glendale spoke at a meeting in the Glendale Christian Church. The meeting is one of a series being held over the country by the American Society for the Control of Cancer which is sponsored by the Women's Field Army. Their slogan "Fight Cancer With Knowledge," was the subject of Dr. Leff's talk.

BOOK REVIEWS

THE LUNG, by William Snow Miller, M. D.,, Sc. D., Emeritus Professor of Anatomy, University of Wisconsin; Charles C. Thomas, Springfield, Ill.; 1937; Price $7.50.

It is only occasionally that anything truly basic is produced by our medical writers. *The Lung* is undoubtedly a book destined to go through the decades as an authoritative monograph on the miscroscopic and gross anatomy of this most intricate organ. The colored plates and photographs are extraordinary and bring new conceptions to all who may have the privilege of going through the book.

The author has brought together all the material and facts that he has gathered in forty-seven years' study of lung structure. From this wide experience he has condensed a fine group of photographs, line drawings, and colored plates which assist in making his descriptions clear.

For the first time the evarious schemes of lung structure have been reprodueed and brought together in a single publication. The various differences of opinion are admirably discussed and evaluated.

The book is one no doctor can afford not to have, as it gives a basic foundation for chest work of any kind. It will more than double the physician's understanding of lung and chest pathology as well as pathology of systemic disease in general.

FOR SALE — X-RAY MACHINE—1 K.K. Type K.C. Mobile Unit complete type D adjustable carriage and 30 M.A. Radiator Coolidge Tube, 1 clear Rad. shield. Cost new $630, August, 1935. Selling to settle up estate of deceased physician. Write Ben L. Rudderow, Court House, Phoenix, Arizona, for further details.

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ANNUAL MEETING OF THE ARIZONA STATE MEDICAL ASSOCIATION

At the 46th Annual Meeting of the Arizona State Medical Association, under the auspices of the Yuma County Medical Society, as held at Yuma, Arizona on April 1, 2 and 3 last, a representative number of physicians from over the state attended to hear the scientific papers presented and to participate in the social activities. Doctors from all County Societies in the state, with the exception of Greenlee, were in attendance. The registration shows that 115 physicians were present which, considering the geographical location of Yuma, was considered most representative.

Speakers from out of the state appearing on the program were Dr. Henry Dietrich of Los Angeles, Pediatrics; Dr. John C. Wilson of Los Angeles, Orthopedics; Dr. Norman Epstein of San Francisco, Fever Therapy; Dr. W. W. Bauer of the American Medical Association, Health; and Dr. R. B. Homan of El Paso as Fraternal Delegate from Texas.

Arizona doctors appearing on the program were: Doctors F. R. Haroer of Tucson V. S. Randolph of Phoenix, E. Payne Palmer of Phoenix, Clarence G. Salsbury of Ganado, Philip G. Corliss of Somerton, W. Paul Holbrook of Tucson, J. B. Littlefield of Tucson, H. M. C. Grow of Yuma, C. S. Kibler of Tucson, Samuel H. Watson of Tucson, Leslie R. Kober of Phoenix, Ralph L. Hoffman of Flagstaff, Owen P. Heninger of Safford, J. H. Patterson of Phoenix, J. D. Hamer of Phoenix, R. J. Stroud of Tempe, R. D. Kennedy of Globe, Norman A. Ross of Phoenix, R. F. Palmer of Phoenix, C. P. Austin of Douglas, E. C. Houle of Nogales ,and William Jewell Smith of Phoenix.

Entertainment features highly enjoyed were a Buffet Supper on the evening of April 1 with special program features from Los Angeles and the Annual Banquet and formal dance on April 2. A sightseeing tour of the Imperial Dam and All American Canal was enjoyed as an unusual feature of this nature. The luncheon as served at San Luis, Mexico, and the ensuing sightseeing trip for the afternoon was an outstanding feature of entertainment for the Ladies' Auxiliary on Thursday.

At this meeting Dr. C. R. Swackhamer of Superior was inducted into office as president by Dr. J. D. Hamer, the out going president. Officers elected at the House of Delegates Session were: Dr. Hal W. Rice of Bisbee as President-elect; Dr. W. Paul Holbrook of Tucson as Vice-president; Dr. D. F. Harbridge of Phoenix as Secretary; Dr. C. E. Yount of Prescott as treasurer; Dr. Jas. H. Allen of Prescott as Councilor for the Northern District, and Dr. J. D. Hamer of Phoenix as Delegate to the American Medical Association. By action of the Council, Dr. John E. Bacon of Miami was voted the Medical Defense member of the Council.

Tucson, Arizona, was voted as the convention city for the 47th Annual Meeting of the Association for the year 1938.

A "bill of rights" in the field of contraception, for physicians was handed down by the United States Court of Appeal for the Second Circuit on November 30 of 1936 in a test case on the importation of Japanese pessaries sent to an American physician for research purpos-

es. The American profession has been hampered in preventive medicine by the Comstock law enacted over sixty year ago. The court stated: "We are satisfied that this statute . . . . was not to prevent the importation, sale or carriage by mail of things which might intelligently be employed by conscientious and competent physicians for the purpose of saving life or prompting the well being of their patients."

AMERICAN PUBLIC HEALTH ASSOCIATION—WESTERN BRANCH—MEETING

The Southwest, especially Arizona and Phoenix, is honored by having had the annual convention of the Western Branch of the great American Public Health Association. We regret that the program was not in our hands in time for appearance in March and that this issue which might carry it, probably can not be in the mail in time to be in the hands of our physicians before the date of the meeting. ....

It perhaps would not be wise for the American Public Health Association to be an integral part of the American Medical Association, or that a state public health association should be an integral part of a state association; but certainly there should be close contact between the two types of associations. Physicians of the two organizations should take an active interest in both. Especially should practicing physicians be cognizant of what is going on in their state and districts in a public health way so as to be in a position to approve or disprove of the programs of the public health departments in which they are most interested. All members, professional and lay, of the public health associations should be extremely anxious to have the interest of physicians not alone for the support the physicians might give to their programs, but for the assistance physicians might give in developing intelligent programs.

We hope that the physicians of the southwest and especially of Arizona and Phoenix showed the American Public Health Association the courtesy of registering and attending the sessions. The Arizona Public Health Association was host to the parent association.

We hope to carry a report of the meeting in the May issue.

THE AMERICAN FOUNDATION REPORTS ON "AMERICAN MEDICINE"

Physicians will wish to know what this report is, what the American Foundation is and who furnished the opinions which are the basis for the reports.

The full title used by the organization is "The American Foundation Studies in Government." The chairman of the foundation is Curtis Bok; the member-in-charge of the "American Medicine" studies is Esther Lape; other members are: Hugh L. Cooper, consulting engineer; Thomas W. Lamont of J. P. Morgan and company; Robert A. Millikan of the California Institute of Technology; James D. Mooney, president General Motors Export Company; Roscoe Pound, former dean Harvard Law School; Mrs. Ogden Reid, vice-president N. Y. Herald-Tribune; Elizabeth F. Read, director of research; William Scarlett, Protestant Episcopal Bishop of Missouri; Truman G. Schnabel, M. D., associate professor of medicine, University of Pennsylvania School of Medicine; Mrs. F. A. Vanderlip, president board of trustees, N. Y. Infirmary for Women and Children; and John G. Winant, former governor of New Hampshire.

Up to the time of starting the study of American Medicine, the foundation's investigations have had to do entirely "with governmental and political science."

The present study is in charge of Truman G. Schnabel, M.D., Esther Everett Lape and Elizabeth F. Read, and is a definite departure from previous work, but has been pursued so far in the same broad spirit that prevailed in the former studies.

To understand the present report it is necessary to know something of the previous work of the foundation. Mr. Bok wrote the foreword to the American Medicine report; regarding the government work he says: "We contemplated the changing forms around us, wondering if it were discoverable, in measurable terms how far and in what manner a government's capacity for service to its citizens is conditioned by its form.

"There may be an answer to this question. We have not found it. And the zeal to find it has become less than a major interest to us. . . If it could first be established what a government could or should do for its citizens, then

it would become much simpler to determine under what form of government this could most efficiently be done.

" . . . We think therefore, that researches into the field of government are really important only in the degree in which they are accompanied by systematic and continuous education of the public. We laid upon ourselves the obligation to see to it that our researches should be of this type. We have, therefore, developed a technique for taking back to definite groups of the public, in constantly widening numbers, the result of our researches. Indeed we have developed a technique whereby not we but the competent or especially interested groups really do the researching—by which I mean to say that we attach no final value to our personal conclusions, except to the degree to which they are checked and supplemented by the groups throughout the country especially competent to have opinions and information, and to exercise judgment, in a given field. Our procedure is to present problems to competent groups and then to define the problems comprehensively by assembling all the factors brought forward in the free discussion that follows. We do evaluate the ideas, but under stern challenge from our collaborators.

" . . . What is achieved by this method of work on the one hand, is a sharp checking of our own 'facts' and theories, and, on the other, a continuing education of public sentiment by a discussion into which all and not merely a few of the pertinent factors have been introduced."

Regarding the present study on medical care, Mr. Bok says: "The results of it you will judge for yourself; they are placed before you in as fair a form as we have known how to achieve."

Dr. Schnabel in the introduction, speaking of proposals for changes in medical care, says: "Far reaching solutions have . . . been proposed and hotly debated. The root of the difficulty seemed to us to lie in the fact that agitation for solutions has preceded analysis of what the present situation really is. . . There must be a considerable amount of agreement on the real nature of the defects in a given situation before support can be secured for particular methods of remedying these defects. . . It certainly should not be beyond the power of civilization to make adequate medical care "available" to all citizens. But to do so effectively will require a subtler and more complex procedure than the kind of descriptive mechanism that might serve to make "available" a commodity.

" . . . We have not, at this point, been concerned to find solutions for the problem or for any particular part of it. On the other hand, we have wanted to etch in the present picture fully and, by demonstrating its complexity, avoid over-simplification in the application of remedies.

" . . . what is finally decided upon should, in our view, emerge as a result of scientific comparative study of **all** the possibilities, and not as the result of sincere but myopic propaganda from exclusive advocates of insurance or any other specific program.

" . . . it seemed to us that the group best qualified to define the problem in **the first instance** is the qualified medical men of the country. They should have a better idea of what constitutes adequate medical care than any economist or any government administrator. . . It is hardly to be feared that their sizing up of the problem would be merely or purely from the scientific or professional angle."

" . . . Whatever recommendary force this report may have is due to the force of the ideas themselves and not to any selective emphasis we place upon them."

The foundation has selected a medical advisory committee which endorses the report merely as a fair summary of the views expressed by the physicians—around two thousand of them. Among the physicians on the advisory committee are: Isaac A. Abt, Chicago; Walter C. Alvarez, Rochester, Minn.; James R. Arneill, Denver; John E. Bacon, Miami, Ariz.; Orville Harry Brown, Phoenix; Phillip King Brown, San Francisco; Hugh Cabot, Rochester, Minn.; Henry A. Christian, Boston; J. Rosslyn Earp, Santa Fe, N. M.; Evarts A. Graham, St. Louis; J. Shelton Horsley, Richmond, Va.; Ernest E. Irons, Chicago; Allen B. Kanavel, Chicago; Smith Ely Jelliffe, New York City; John A. Kolmer, Philadelphia; James S. MccLester, Birmingham, Ala.; James Alexander Miller, New York City; Joseph

L. Miller, Chicago; George R. Minot, Boston; F. M. Pottenger, Los Angeles; G. Canby Robinson, Baltimore; Fred J. Taussig, St. Louis; Borden Smith Veeder, St. Louis; and Louis B. Wilson, Rochester Minn.

Three lists of physicians were selected to whom the letter of industry was sent. The first and by far the largest list consisted of representative men and women who have been in practice twenty years or more. Geographical distribution and divisions of medicine were as wide as possible. Members of all national medical associations were liberally selected. Special effort was made to reach general practitioners particularly those in rural districts. To get the names the foundation conferred with many advisors, medical and laymen, in the different states. The second group were physicians who were in practice less than five years. The deans of grade A schools selected these. It is interesting that only one dean failed to reply to the request, by sending a list. A third list consisted of those who had been in practice less than twenty years but more than five.

The letter of inquiry sent to the physicians read as follows: "Has your experience led you to believe that a radical reorganization of medical care in this country is indicated? If so in what direction? If you do not believe that radical reorganization is indicated, what, if any, changes or revisions in the present system would you like to see made? What evolutionary possibilities would you stress?"

There were approximately 5000 replies from around 2100 physicians. We do not find it stated how many physicians were circularized. Many physicians answered the inquiry with more or less punctuality and later after giving the subject more thought corrected former replies or supplemented them. The fact that there were nearly two and a half replies per physician indicates mature judgment was expressed at least by a large number of those who replied. The replies are quoted from in the report anonymously.

The most we can say about the report is that twenty-one hundred of the leaders of the American medical profession have contributed their honest thought and experience on the problems of medical care. Critics may say that in anonymity some have been indiscreet. Partisans will suspect that the "other side" has been favored by the editors. We are sincerely grateful and appreciative for the apparent honesty and sincerity of the contributors and for the skill and fairness of those who have classified the five thousand replies into the eleven provoking-of-thought fascinating chapters.

Since no formal questionaire was used there is, of course, an expected incompleteness in the result. This does not really matter since the foundation and the advisory committee "had no axe to grind"—no brief for any proposed solution. Handled by the scientific method with no prejudice the volume cannot fail to make us more tolerant, more thoughtful, better informed and wiser in our judgment on the difficult economic and technical problems with which the profession is faced today. American Medicine—the title of the report—will be a source book in medical economics and in the organization of medical facilities for social service for many years to come.

Dr. C. W. M. Poynter, dean of the University of Nebraska College of Medicine, commented as follows upon the report: "The foundation has made a contribution which can not help being a benefit to the relation of the public to American medicine. I feel moved to comment on the restraint that is exhibited in connection with this report. I am sure it does and will do very much more for the problem than any other method of handling that might have been used in connection with as controversial a subject as this necessarily must be. . . My early suspicion that the work might have been undertaken with an attempt to prove some theses, I am frank to confess, was entirely unfounded. I am not familiar with all surveys, but I can think of none that has so adequately completed its task."

From what has been said in preceding paragraphs we are led to comment that here is a survey that may get somewhere. It has been undertaken in a spirit of candor and freedom of prejudice for preconceived notions except that every individual deserves the best in medical care that scientific medicine affords. At the present there are two sad short-comings which have much to do in causing the public not to get the best possible medical care. Both have to do with propaganda. The public does not know how to go about getting the best

available medical care. They spend their money, plenty of it, on charlatans, quacks, cultists, patent medicines and other nostrums. It will take a vast amount of propaganda to get them to do otherwise. Fifty percent of physicians, perhaps, keep reasonably informed on the advances made in scientific medicine. Even a part of these, we must admit, gather their information from detail men of drug and biological firms. The members of the other group are too busy impressing the public with their importance that they have not the time to plow through the vast amount of literature to get what they need. Since human nature cannot be changed, the method of presenting scientific facts of direct application to practice must be changed. This again is propaganda. Perhaps the foundation will attempt to do these or to see that they are done.

We conclude by saying that this is a stupendous piece of work and a monumental contribution on a difficult subject. To Esther Everett Lape foundation representative, and member in charge of the studies on American Medicine, we extend congratulations for having done such a difficult task in so commendable a fashion.

The **third annual meeting** of the **American Neisserian Medical Society** will be held June 8, 1937, beginning at 10:00 A. M., in the Senator, Atlantic City.

The program consists of discussions on the various phases of the management and control of gonorrhea. All interested are cordially invited to be present.

DR. D. F. HARBRIDGE HONORED AT ANNUAL MEETING

At the annual meeting of the Arizona State Medical Association held at Yuma, Arizona on April 1 2 and 3, Dr. D. F. Harbridge, of Phoenix, was honored for his twenty years of service to the Association as Secretary. In recognition of this outstanding record, Dr. J. D. Hamer, out-going President, on behalf of the Council presented Dr. Harbridge with a solid gold, diamond studded, official badge emblem appropriately engraved. In his presentation remarks, Dr. Hamer stressed the great service Dr. Harbridge has rendered the Association through his constant interest and attention to Medical Defense, Social Security, Legislative, and all other phases and situations that in any way influence organized medicine in its relationship to the public and the practicing physician. This recognition given Dr. Harbridge for outstanding service elicited resounding applause from the House of Delegates, with several members taking the floor to express further appreciation from the body assembled. At the ensuing election Dr. Harbridge was unanimously elected to continue in the office of Secretary.

BOOK REVIEWS

THE 1936 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY—Obstetrics edited by Joseph De Lee, A. M. M. D., Professor Obsterics, University of Chicago Medical School; Chief of Obstetrics, Chicago Lying-In Hospital and Dispensary, in affiliation with the University of Chicago. Gynecology edited by J. P. Greenhill, B. S., M. D. F.A.C.S., Associate Professor of Gynecology, Loyola University Medical School; Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital; The Year Book Publshers; Chicago, Ill.; 1936; Price $2.50.

To those men doing obstetrics and gynecology the yearbook will come as an extensive postgraduate course. The literature in that field has been profuse and extremely interesting and what could be more to the point than a complete resume of the recent literature in condensed and pithy form.

Every article is a separate stimulation to better thought and better work in Obstetrics and Gynecology. The literature is grouped into sections as endocrinology, pregnancy, labor, operative techniques, etc. Especially in endocrinology will the reader realize how valuable is the volume. To men doing general work the book is almost as valuable for it deals with a large part of general practice, obstetrics and office gynecology—indeed, considering the small price of the book, no doctor can afford not to have one.

MATERIA MEDICA, TOXICOLOGY AND PHARMACOGNOSY, by William Mansfield, A. M.,, Phar. D.; Dean and Professor of Materia Medica and Toxicology, Union University, Albany College of Pharmacy, Albany, N. Y.; The C. V. Mosby Co.; 1937; price $6.75.

Mansfield has written a fine volume giving all details of preparation and use of the drugs in the Medical armamentarium. The work is of value to physicians, pharmacists, and students of pharmacy, nursing and medicine.

The book classifies and groups the drugs so as to permit ready reference. One feature of the book is a working photograph of each vegetable and animal drug. The organic and inorganic compounds are grouped into caustics, irritants, and systemic poisons, the latter group including cardiac stimulants, vasoconstrictors, cardiac depressants, respiratory depressants, asphyxiating gases, motor stimulants, motor depressants, general and local anaesthetics, narcotics, antipyretics, etc.

The book is very well adapted to detailed study of drugs and is very useful as a ready reference to student, doctor and pharmacist.

Program---New Mexico Medical Society, Clovis, May 13, 14, 15

Announcements

Registration headquarters will be held at the Hotel Clovis. Every member, visitor and guest is requested to register on arrival. Registration fee is $5.00. This entitles one to all entertainments, smoker, luncheons and banquet.

No address or paper read before the Association, except those of invited guests, shall occupy more than twenty minutes, and general discussions to three. The opening discussions are limited to five minutes. No one shall speak more than twice on the same subject.

Papers read before the scientific sessions shall become the property of the Association and shall be deposited witth the secretary for publication in the official organ of the Association (Southwestern Medicine).

HEADQUARTERS—Hotel Clovis.

MEETING PLACE—Scientific Session will be held at Hotel Clovis.

OFFICERS

President—Dr. M. B. Culpepper.....Carlsbad, N. M.
Pres.-Elect—Dr. Geo. W. Jones.....Clovis, N. M.
Vice-Pres.—Dr. W. R. Lovelace....Albuquerque, N. M.
Sec.-Treas.—Dr. L. B. Cohenour, Albuquerque, N. M.

COUNCILORS

Dr. H. A. Miller, Clovis, N. M.....Three Years
Dr. C. F. Beeson, Roswell, N. M.....Three Years
Dr. C. B. Elliott, Raton, N. M.....Two Years
Dr. R. O. Brown, Santa Fe, N. M.....Two Years
Dr. Carl Mulky, Albuquerque, N. M.....One Year
Dr. C. A. Miller, Las Cruces, N. M.....One Year

DELEGATES A. M. A.

Dr. H. Miller, Clovis.
Dr. W. R. Lovelace, Albuquerque.

Program, Thursday, May 13, 1937
(Subject to change)
Opening Session—9:30 A. M.
Hotel Clovis
Dr. M. B. Culpepper, Carlsbad, N. M.
Presiding.

Invocation .....Rev. J. F. Nix, Clovis
Address of Welcome.....Mayor L. J. Stone, Clovis
Response.....Dr. W. Gekler, Albuquerque
Installation of President Elect, Dr. Geo. W. Jones
Installaation of resident-Elect—
Dr. Geo. W. Jones, Clovis
Discussion of general social economic questions affecting the Medical Profession, led by—
Dr. R. Brown, Santa Fe, or Dr. H. A. Miller, Clovis.
Dr. M. K. Wylder, Albuquerque, New Mexico.
Subject—"Care of the New-born."
Dr. E. A. Hertzler, Halstead, Kansas.
Subject—"Surgery of the Thyroid."
Luncheon

Afternoon Session

Dr. A. Hertzler, Halstead, Kansas.
"Surgery of the Thyroid."
Dr. M. K. Wylder,, Albuquerque.
"Care of the New-Born."
Dinner
Hotel Clovis—7:30 P. M.
Stag Party—8:00 P. M.

Program, Friday, May 14, 1937
Medical Section
9:00 A. M.
Hotel Clovis

Dr. Ray M. Balyeat, Oklahoma City, Okla.
Subject—"The Therapeutic Value of the Intratracheal Use of Iodized Oil Combined with Eliminative Measures and Specific Desensitization in the Treatment of Intractable Asthma."
Dr. Everett C. Fox, Dallas, Texas.
"Skin Cancer," also "Treatment of Common Skin Diseases." (Film).
Dr. Harold T. Low, Pueblo, Colo.
Subject—"Vesical Neck Obstruction in Male Children."
Luncheon.

Afternoon Session
2:00 P. M.

Dr. Barton A. Rhinehart, Little Rock, Arkansas.
Subject—"Functional Disorders of Gastro-Intestinal Tract."
Dr. Henry C. Gernand, Los Angeles, Calif.
Subject—"Conduct of Labor in regard to Operative Intervention."
Dr. William F. Daniel, Los Angeles, Calif.
Subject—"The Present Management of Cancer of the Rectum." (Film)

Banquet

Dancing and Dining—Hotel Clovis.
Toastmaster.....Dr. M. K. Wylder, Albuquerque

Program, Saturday, May 15, 1937
Oening Session—9 A. M.
Hotel Clovis.

Dr. John A. Schoonover, Denver, Colo.
Subject—To be decided later.
Dr. M. S. Henderson, Mayo Clinic, Rochester.
Subject—"Orthopaedic Surgery of Today," or "Modern Orthopaedic Surgery."
Dr. Hugh Jeter, Oklahoma City, Okla.
Subject—"Blood Dyscrasias."
Luncheon—Hotel Clovis

Business Meetings

Thursday, May 13—Hotel Clovis.
Meeting of Council—8:00 A. M.
Meeting of House of Delegates—8:30 A. M.
Friday, May 14—Hotel Clovis.
Meeting of House of Delegates and Council—1:30 P. M.
Election of Officers.

Woman's Activities

Thursday, May 13—
Buffet Supper and Bridge at the home of Mrs. H. A. Miller, 1415 Gidding St., at 7:00 P. M.
Friday, May 14—
Luncheon—Gran Quivara at 1:00 P. M.

MINUTES OF THE YAVAPAI COUNTY MEDICAL SOCIETY

The postponed meeting of the Yavapai County Medical Society was held in Jerome on the evening of March 23rd. Dr. A. C. Carlson, of the Phelps Dodge Corporation Hospital, and his staff were hosts.

After a delightful dinner the groups presented their cases for discussion. The discussions had been well prepared, were presented clearly and the diagnoses were logical interpretations of the symptoms given.

There were present Doctors Roberts, Taylor, Florence Yount, Flinn, Born, Yount, Jr., Carlson, Southworth, Bassett, Phillips, Jolley,, Swetnam, McNally, Hilton, Looney, Hein and Yount, and from Whipple, Doctors Herbig,, Landy, Quinn, Foster, Menindez and Cobb.

Two doctors were accepted for membership in the Society, Robert Thomas Phillips of the Jerome staff, and John W. Sonnor of Seligman.

The next meeting of the Society Study Club will be held in Prescott on Tuesday, April 20th.

C. E. YOUNT, Sec'y.

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DISEASES OF THE CORONARY ARTERIES AND CARIAC PAIN, edited by Robert L. Levy, M. D.; Professor of Cinical Medicine, College of Physicians and surgeons, Columbia University; Associate Visiting Physician and Cardiologist, Presbyterian Hospital, New York City; The MacMillan Company; New York City; 1936; price $6.00.

This fine volume is the work of the foremost cardiologists in the country. With Dr. Levy as editor the writings of 14 individuals are brought together to give every important detail of cardiac physiology, anatomy and function. It is a fine symposium bringing together works of the experimental physiolgists with those of the clinicians.

During the past 20 years great advances have been made in the study of affections of the coronary arteries and cardiac pain. The reader will marvel at the volume of new information and new conceptions derived from reading this volume on the heart. It contains an understanding of the behaviour of the coronary circulation which is indispensable to those who undertake the treatment of heart disorders.

THE DISEASES OF INFANTS AND CHILDREN by J. P. Crozier Griffith, M. D., Ph. D.; Emeritus Professor of Pediatrics in the University of Pa.; Consulting Physician to the Children's Hospital, Philadelphia; Consulting Physician to St. Christopher's Hopital for Children; Consulting Pediatrist to the Woman's ,the Jewish and the Misericordia Hospitals, etc.; Corresponding Member of the Societe Pediatrie de Paris and A. Graeme Mitchell, M. D.; B. K. Rachford, Professor of Pedriatics, College of Medicine, University of Cincinnati; Director of the Children's Hospital Research Foundation; Director of Pediatric and Contagious Services in the Cincinnati General Hospital; W. B. Saunders; Philadelhpia; 1937; Price $10.00.

Griffith and Mitchell have produced a large comprehensive textbook on Pediatrics which promises to lead the field for many years to come. All of the latest thought in pediatric practice is contained within its 1200 pages. Preventive measures have been emphasized; anatomy and physiology receive particular attention. Artificial feeding is ably handled and discussed with rare simplicity. Tuberculosis acid-base balance and gastro-enteritis are fully discussed with inclusion of the newer thoughts and methods of treatment. Charts and photographs are freely used, many of the photographs being in color. On the whole the book is to be considered of primary importance to students, practitioners, teachers and pediatricians.

THE RENAISSANCE OF PHYSICS by Karl K. Darrow, Ph. D., Research Physicist, Bell Telephone Laboratories; The MacMillan Co.; New York; 1936; Price $3.00.

The book is a resume of a course of lectures given by the author before the Lowell Institute in Boston. The text is of primary importance to scientists and those interested in physics and the elementary sciences. Newer concepts in physics are fully discussed.

Some headings of chapters which indicate the nature of the book are: "Intimations of Electricity," "The Atom Visible," "Structure of the Atom," "Mystery of Waves and Corpuscles," etc. The book is written in very fine style and is extremely interesting even to the doctor who is interested primarily in more concrete subjects.

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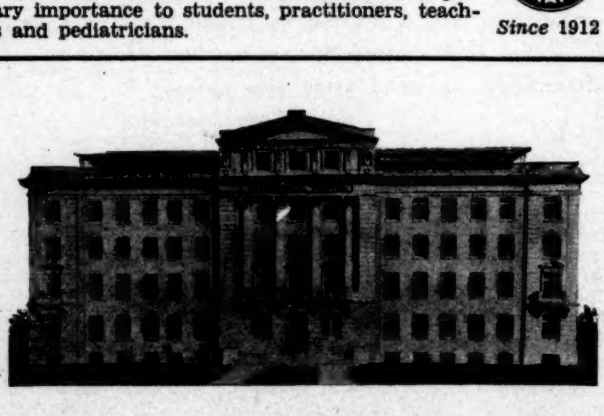

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